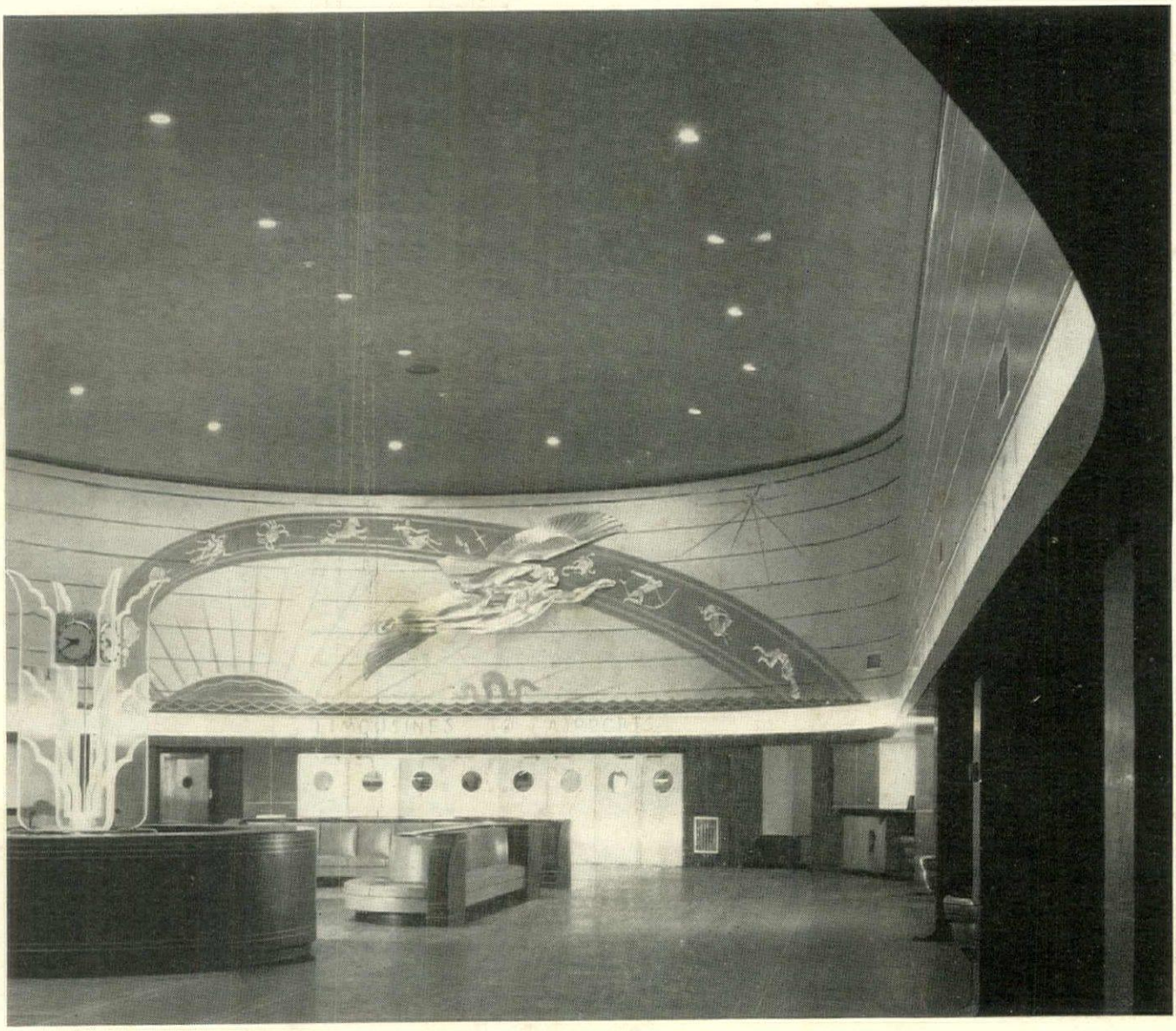
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THE ARCHITECTURAL FORUM

JUNE 1941

WHEREVER CLIENTS *"don't want Noise..."*



CELOTEX ACOUSTICAL PRODUCTS



will insure Quiet!

June 1 to 7 has been designated "Noise Abatement Week," and the problem of sound-conditioning *will come in for concentrated attention* during that period. The new Airlines Terminal Building in New York, designed by John B. Peterkin, is typical of NOISE-QUIETING problems which face architects every week of the year, in every part of the country. For this particular job, Mr. Peterkin chose Celotex Muffletone from among the wide range of Celotex Acoustical Products *offered to meet every type of acoustical problem.* Let us supply you with up-to-date specifications on all of them.

STOP *that* NOISE
NOISE ABATEMENT WEEK
JUNE 1 to 7

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ARCHITECTURAL FORUM

JUNE 1941

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Editor, Howard Myers; *Managing Editor*, Ruth Goodhue; *Associates*, Paul Grotz, Joseph C. Hazen, Jr., C. Theodore Larson, George Nelson, Henry Wright; *Assistants*, John Beinert, Anna De Cormis, Richard E. Saunders, Madelaine Thatcher, Nadia Williams. THE ARCHITECTURAL FORUM is published by Time Inc., Henry R. Luce, Chairman; Roy E. Larsen, President; Charles L. Stillman, Vice President and Treasurer; Howard Black, Allen Grover, Eric Hodgins, P. I. Prentice, Vice Presidents; David W. Brumbaugh, Secretary. Publication and Subscription Office, Orange, Conn. Subscriptions may also be sent to 330 East 22nd Street, Chicago, Illinois. Executive, Editorial and Advertising Offices, Time & Life Building, Rockefeller Center, New York. Business Manager, H. A. Richter. Advertising Manager, George P. Shutt. Address all editorial correspondence to Time & Life Building, Rockefeller Center, New York. Yearly subscription, payable in advance, U. S. and Possessions, Canada, Cuba, Mexico, South America, $4.00. Elsewhere $6.00. Single issues, including Reference Numbers, $1.00. All copies Mailed Flat.
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VOLUME 74—NUMBER SIX

THE MONTH IN BUILDING

TRENDS. At the quarter-year mark total building activity, measured in permit valuations, enjoyed a comfortable 36 per cent lead over 1940. March figures for residential and modernization construction sprinted ahead; non-residential building lagged slightly behind the February pace (see tabulation, right). Highlights from THE FORUM's complete statistical presentation (see p. 452): Mortgage recordings sharply up, wholesale and retail building costs leveling off, rents creeping slowly up, foreclosures continuing downward, marriages still on the upward course, FHA insurance business booming in all categories.

PERMITS (Source: U. S. Department of Labor)

	Monthly Data			First Three Months	
	Mar. 1941 (millions)	Comparison with Feb. '41	Comparison with Mar. '40	1941 (millions)	Comparison with 1940
Residential	$119.3	+37%	+22%	$293.6	+23%
Non-residential	63.1	− 8	+52	202.9	+84
Additions, repairs	29.3	+25	+14	76.5	+10
Total	211.7	+18	+10	573.0	+36

FHA EXTENSION

Stalled for four months somewhere between the office of Federal Loan Administrator Jesse Jones and the Budget Bureau, the FHA-sponsored amendments to its National Housing Act finally popped up on the floor of Congress last month. FHA had been rightly worried about the delay, because, without the amendments, many of its mortgage insurance powers would have been cut short on July 1.

Majority of the proposed NHAct changes relate to Title I, the modernization and repair section, which would be given a new three-year lease on life—until July 1, 1944. To facilitate and encourage the conversion of big houses into several little ones for the benefit of defense workers, FHA has recommended that Congress up the maximum loan limit from $3,000 to $5,000 and the maximum loan term from three to five years. (FHA's rules and regulations will still limit small repair loans to the shorter term.) New construction under Title I would become eligible for $3,000 loans. Present maximum: $2,500.

Also to be extended (probably until mid-1944) is FHA's Title II authorization to insure mortgages on used houses. This provision is of particular interest to realtors, but also affects builders of new houses by stimulating the trade-in market. The amendment to this section would also raise to 35 per cent the present restriction of FHA's second-hand house insurance to 25 per cent of its total annual Title II business. Since the ratio has been consistently under 20 per cent throughout most of FHA's seven-year life, the recommendation carries no immediate significance. However, it might be construed as a forward look to the day when an increasing U. S. war effort may dictate the partial or complete cessation of private non-defense construction.

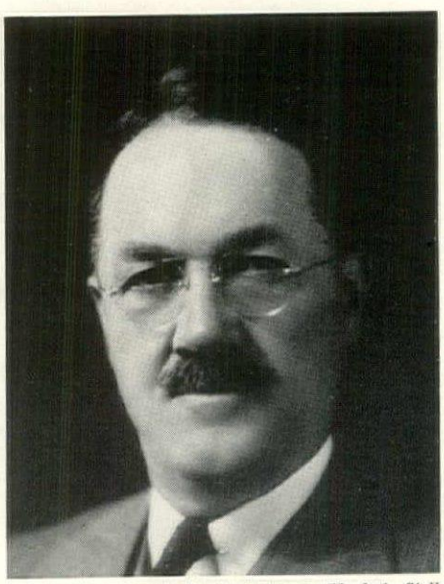
At its present pace, FHA will probably outrun its $4 billion insurance authorization before year-end. To be on the safe side, FHA administrator Abner Ferguson is asking for a $1 billion boost in the proposed amendments.

While most observers believe that all of FHA's wishes will be granted, some are skeptical in view of the Federal Reserve Board's proposed curb on installment selling (see p. 423, col. 2).

TURNER FOR TURNER

In 1902 Henry C. Turner founded the Turner Construction Co., elected himself president, did a $40,000 business the first year. Since then his company has completed some 1,600 buildings in 26 States and U. S. possessions at an aggregate cost of over $500 million; has received more defense contracts than any other company; has an estimated $40 million volume on its books for 1941. Satisfied and 70, Henry C. Turner month ago gave the president's chair to Brother J. Archer Turner, moved up to the recently created position of Board Chairman in which capacity he will continue to be actively identified with the company's affairs.

A civil engineer by education (Swarthmore), 56-year-old J. Archer Turner has been in the building business exclusively for 35 years. In 1919 he became general superintendent of Turner's Philadelphia office, in 1931 he was elected a director and vice president in charge of that office. And for the past five years he has been with the company's main New York City office as chairman of the executive board and, more recently, as executive vice president. Today, as president, he will have a bigger part in the development of the nation's biggest defense construction project—$31 million worth of aviation and fuel storage facilities for Hawaii's Pearl Harbor and other Pacific Islands.



Contractor Joseph Archer Turner *Blank & Stoller*

LIFE ENDS AT 40

A dog's life, according to canine statisticians, averages twelve years. Insurance actuaries estimate man's life span at 62. Recently an Oklahoma magistrate fixed the life of a 33-story office building at 40.

This significant judgment evolved from a tax recovery suit brought before the U.S. District Court by the First National Bank Building Corp. of Oklahoma City against Revenue Collector H. C. Jones. In making its 1934 income tax return, the building corporation had estimated the economic life of the $3 million one-year-old structure at 40 years. Taxes were calculated on the basis of depreciation studies made by the Internal Revenue Bureau in 1931 which suggested a 2½ per cent depreciation rate for structures with a 40-year life span.

The Commissioner of Internal Revenue subsequently disallowed the rate and, in determining the tax deficiency, put the building's economic life at 66 2/3 years, allowed only a 1½ per cent rate of depreciation. While the taxpayer made up the deficiency, he did so under protest, then sued and won.

Pleading its case, the building corporation laid before Government pertinent evidence on the nature of building obsolescence and its influence on a building's productivity and economic life span:

1. Obsolescence is tied up principally with the use and the preference of tenants and tenants' customers. Thus, people like to do business with institutions where there is plenty of auto parking space.

2. Tenants prefer their offices in districts where other diverse forms of enterprise are located. When other lines of business move away, a building, no matter how new, loses in productivity.

3. Some recent but costly developments, such as air conditioning, are now considered

Here's how to SPECIFY MASONITE* CELL-U-BLANKET*

The New Flexible Insulation in Blanket Form

THERMAL INSULATION

NOTE: For General Conditions governing the work under this heading, see pages 4 to 12, inclusive.

1. WORK INCLUDED—The work included under this heading is the furnishing and applying of the thermal insulation shown upon the drawings and herein specified—substantially as follows:

Exterior Walls—All exterior walls enclosing living quarters, including gables and dormer walls.

Ceilings—All ceilings separating quarters from unfinished attic or similar spaces.

Roofs—All roofs enclosing living quarters.

NOTE

2. MATERIALS—Thermal insulation shall be Standard MASONITE CELL-U-BLANKET as manufactured by the Masonite Corporation, 111 West Washington Street, Chicago, Illinois.

Thicknesses—All vertical wall insulation shall be 3/4 inch thick. All ceiling and roof insulation shall be 1 inch thick.

Widths—Blanket widths shall be selected to suit the stud, ceiling joist and rafter spacings shown on the plans and details.

Masonite Cell-U-Blanket is a new and superior blanket insulation designed primarily for application to studs, joists or rafters. The core is Cellufoam, today's most sensational insulating material. Cell-U-Blanket is so light in weight that a 16-inch *De Luxe* roll, sufficient to cover 125 square feet of area, weighs less than 30 lbs.

Cell-U-Blanket, properly applied, is water and wind proof . . . provides a highly effective vapor barrier . . . *does not shrink, sag or settle.* It is termite-treated, mould-proofed, rot-proofed.

TWO TYPES

There's *Standard* Masonite Cell-U-Blanket, with sturdy asphalt impregnated coverings on both sides.

And there's *Silver Sheen* Masonite Cell-U-Blanket, with a non-metallic reflective surface on the flange side.

THREE THICKNESSES

Utility—approximately ½ inch thick.
Efficiency—approximately ¾ inch thick.
De Luxe—approximately 1 inch thick.

SIX WIDTHS

For application to studs, joists and rafters on 12, 16, 20 and 24 inch centers. Also in 33 and 38 inch widths on special order.

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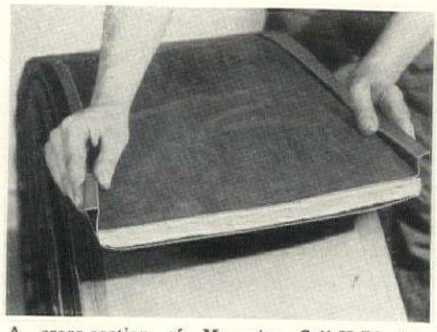
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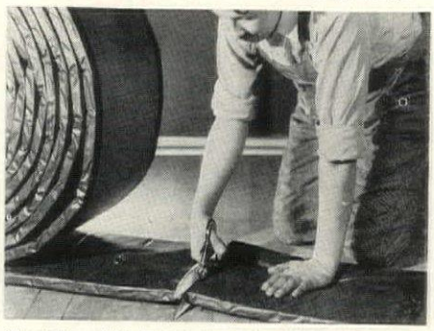
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**Trade-mark Reg. U. S. Pat. Off. "Masonite" identifies all products marketed by Masonite Corp.*

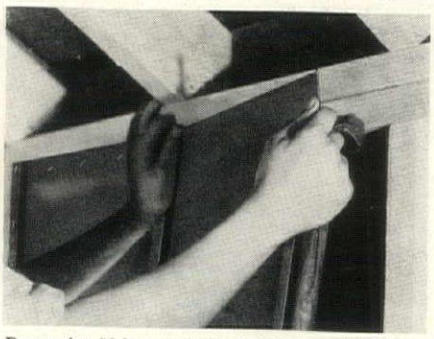
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A cross-section of Masonite Cell-U-Blanket showing the core of Cellufoam and the vapor barrier casing complete with stapling flange.



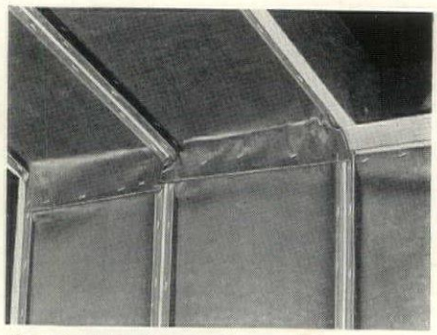
Masonite Cell-U-Blanket should be cut 3¼ inches longer than the dimension between top and bottom plates, using sturdy scissors or snips.



Paper should be cut about 2 inches on both sides and the Cellufoam folded back. Apply and staple vapor barrier to cover face of plate.



For side-wall insulation, staple flange of Masonite Cell-U-Blanket to face of studs, using ¼-inch-long staples spaced not more than 6 inches o. c.



For vapor barrier at plates or headers, allow vapor barrier flaps of Cell-U-Blanket to overlap. Staple flanges and vapor barrier securely.

THE ARCHITECTURAL FORUM

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VOLUME 74
Number 6

necessities, not luxurious accessories.

In the last twenty years, Oklahoma City's business center has shifted to the north and west, has moved away from the buildings. Their span of life is shortened and obsolescence has become an important element in the rating of their depreciation. Evidence: the comparatively new First National Bank Building was only 70 per cent occupied during 1940, grossed only $465,000 in the preceding year—$21,000 less than in 1937.

Taking comfort in the Oklahoma decision, building investors may look to the day when they can base depreciation rates on technological obsolescence as well as on physical longevity.

TNEC ON PRICES

Summarizing in painful detail the geographical price differentials in building materials, the Temporary National Economic Committee's 33rd monograph, issued last month, re-emphasizes what the nation's builders have long recognized: 1) The local nature of the building industry. 2) The economy of using locally produced materials in construction.

Though some of the evidence submitted to TNEC shows broad, cooperative marketing and pricing tendencies, many more facts document the wide diversity of practice. Notable among them:

► There are six general price structures ranging from "one price F.O.B. plant" to uniform delivered prices to all destinations. Most common system is the zone price structure; yet it is used in various ways by only six building industries.

► Retail prices for each material, though based perhaps on a theoretical pricing policy for that industry, depend in practice entirely on local conditions. Thus, asphalt roofing prices in Minneapolis, a producing center, are $4.75 per square. In Butte, Mont., where wood shingles are plentiful, the price runs as high as $9.26 per square. Yet, at another non-producing center, Omaha, Neb., asphalt roofing is priced at only $5.22 per square.

► Quantity and functional discounts vary considerably even between manufacturers in the same industry. While one large paint manufacturer grants 6 to 7½ per cent discounts on a sliding scale utilizing a profit sharing plan, his closest competitor quotes net prices to all dealers and gives annual rebates on a sliding scale based on volume of purchases. Neither changes his prices simultaneously.

► Distribution of building materials may be handled by as many as four agencies. Plumbing fixtures are sent from the manufacturer to company-owned outlets where they are sold to dealers, then to contractors, finally to individuals. On the other hand, sand is sold directly to the builder.

► Retail price movements of different materials show considerable contrast. Sand, gravel, cement, lime, plaster and paint prices changed little from 1935 to 1939 while prices for lumber, equipment, turpentine and several others moved all over the lot.

► Wholesale price movements are equally inconsistent. Cement prices declined in 1936-37, rose in 1937-38, bucked the general price trend all the way.

► Geographical price variations are surprisingly large for many materials. In the retail market, hydrated lime in Boise, Idaho is priced 233 per cent higher than in Philadelphia. Comparing the Rocky Mountain region with the Middle Atlantic area, plaster is 66 per cent higher, roofing 46 per cent, and cement, 55 per cent.

Although it hazards no corrective suggestions, the TNEC report hints that all is not well in the building material industry, points out as a major culprit the concentration of raw materials in divergent areas, i.e., turpentine in Georgia, structural clay in Ohio and Pennsylvania, Douglas fir in Washington. Apparently, TNEC can only hope that raw materials will be more evenly distributed in the next world.

N. Y. STATE LAWS

Before writer's cramp set in with the signing of the last of 1,106 State laws, New York's Governor Herbert Lehman wearily scrawled his signature to a trio of significant Building bills, authorized:

► The formation of Urban Redevelopment Corporations which will permit private enterprise to participate in commercial, industrial and residential slum clearance with the power of condemnation, the privilege of partial tax exemption and opportunity to make a fair profit (for details, see p. 449).

► The extension but tapering off of the moratorium on pre-Depression mortgages. During the second and last year of the extension, mortgagors must pay, in addition to interest, 1 per cent on the principal —the first amortization payment required since enactment of the moratorium in 1932. Commented Lehman: "This bill is a step in the right direction. I would, however, have preferred a bill with larger amortization requirements, accompanied by a reduction of high interest rates."

► The appropriation of $25 million (a slice of the $300 million of previously authorized State public housing funds) to be used for the construction of defense housing projects. According to a plan developed by State Housing Commissioner Edward Weinfeld, this housing will be marketed at normal rentals for the duration. Any "profits" that accumulate will be used, along with the regular State and local subsidies, to lower the rentals to be charged after the emergency when the projects will revert to customary public housing use.

Thus, New York continues to live up to its reputation as the most housing-conscious State in the Union.

ILLINOIS LAW

Like practically every other State in the Union, Illinois has considered enactment of a "little wages and hours law," but unlike the others, the Illinois Legislature a month ago had yet to turn it down. Arguing that it should, Realtor Leo J. Sheridan, President of the Building Managers' Assn. of Chicago and chairman of the local real estate board's legislative committee, injected many a sad but significant statistic into the hearings on the bill.

Bone of contention is that the State law would require commercial building managers to operate on a 40-hour week and pay employes time-and-a-half for overtime, while the Federal law specifically exempts retail and service establishments. (A recent Federal court decision has thrown all office and loft buildings into this category.) Sheridan pointed out that building rents could not be boosted in step with wages due to the pressure of a 20 per cent vacancy (5 million sq. ft.) in Chicago office space. Said he: "I have heard no suggestion that a tenant be compelled by law to pay one-and-one-half times his regular rent if the building is kept open more than 40 hours in a week."

To show that Chicago building owners could ill-afford to pay higher wages, Sheridan highlighted an analysis of 180 local commercial properties, noted that 80 were already operating in the red, that the average net income was only 1.9 per cent of assessed valuation. Claim is that this small margin would disappear completely if the 10 per cent payroll boost involved in the proposed law were added to the certain 5 per cent jump in 1940 realty taxes. For proof, Realtor Sheridan pointed to a well-known Chicago office building owned by an estate, debt-free and well-managed. While its occupancy ratio is well above the average and its rents as high as competition will permit, last year it produced a net income of only $1,500—the salary of one of its several janitors.

If the Legislature passes the controversial wage bill, Sheridan predicts higher rates of bankruptcy, demolition and taxes. Thus, during the past eight years, 178 downtown Chicago buildings have been wrecked, while only 28 new ones have been built—and the latter were all one- and two-story taxpayers. Sheridan states that the net loss in taxable value in this demolition program was more than $6 million, warns that "we are killing the goose that laid the golden egg."

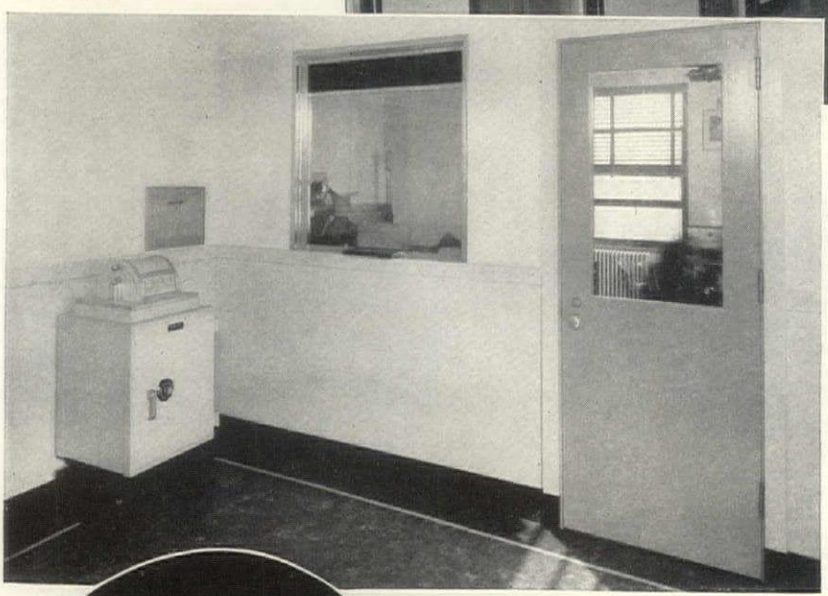
PLASTIC CEILINGS, DOORS, WAINSCOT

for Office Buildings



- Right: Olive Street Lobby of the Railway Exchange Building, St. Louis, with Formica ceiling paneling. Mauran, Russell, Crowell and Mulgardt, Architects.

- Below: Formica Wainscot and doors in the Potomac Bridge in Maryland. Merritt, Chapman & Scott, Contractors.



SMOOTH, EASILY CLEANED SURFACES

STABLE COLORS

SMOOTH, inviting, modern surfaces of Formica paneling give it a business-like utility that appeals to designers of business structures. It is stable in dimensions, does not crack or chip if walls shift or vibrate; it is easy to clean by the simplest methods.

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Therefore, in most of the public buildings, erected in Washington in recent years, Formica has played its part in producing practical and attractive designs. In hundreds of cases where modernization of old buildings has been necessary it has been chosen.

Literature with color cards and erection details are available on request.

FORMICA

The Formica Insulation Co., 4620 Spring Grove Ave., Cincinnati, O.

FOR BUILDING PURPOSES

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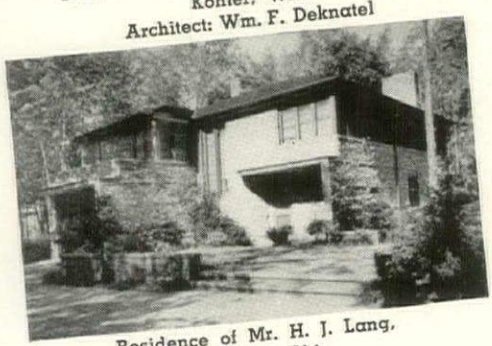
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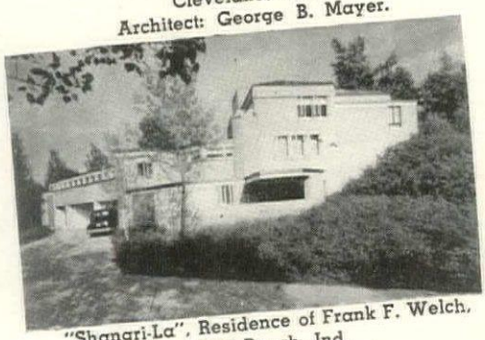
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Kohler, Wisc.
Architect: Wm. F. Deknatel

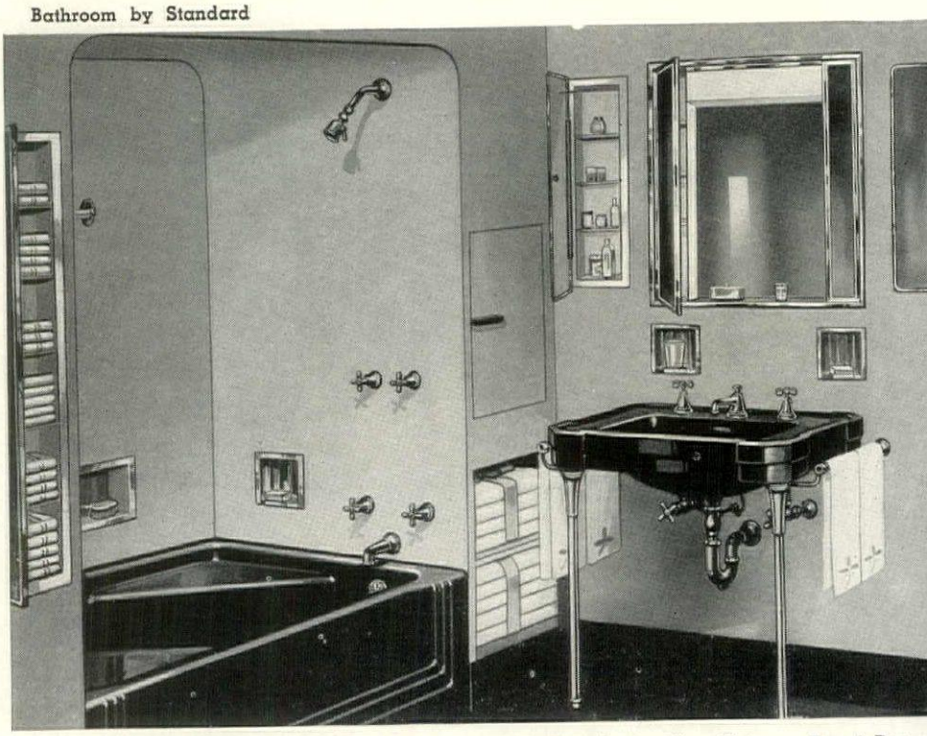


Residence of Mr. H. J. Lang,
Cleveland, Ohio.
Architect: George B. Mayer.



"Shangri-La", Residence of Frank F. Welch,
Long Beach, Ind.
Architect: John Lloyd Wright.

Bathroom by Standard



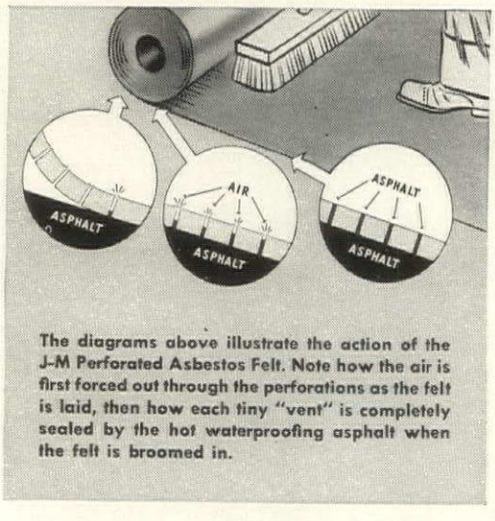
Towel Supply Cabinet No. 510-A; Back wall of alcove above tub — Octagon Towel Bar No. 5001 and Recessed Shelf No. 904; Side wall of alcove above tub — Recessed Soap Holder No. 6000; Over the lavatory — Miami Imperial Cabinet with two side cabinets No. 901; Recessed Tumbler Holder No. 6001; Recessed Soap Holder No. 6000.

MIAMI CABINET DIVISION

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YOU MEAN THESE HOLES MAKE A BETTER ROOF?





The diagrams above illustrate the action of the J-M Perforated Asbestos Felt. Note how the air is first forced out through the perforations as the felt is laid, then how each tiny "vent" is completely sealed by the hot waterproofing asphalt when the felt is broomed in.

***YES!* New J-M Perforated Felts practically eliminate blistering, cut application costs, provide the time-tested advantages of all J-M Asbestos Felts**

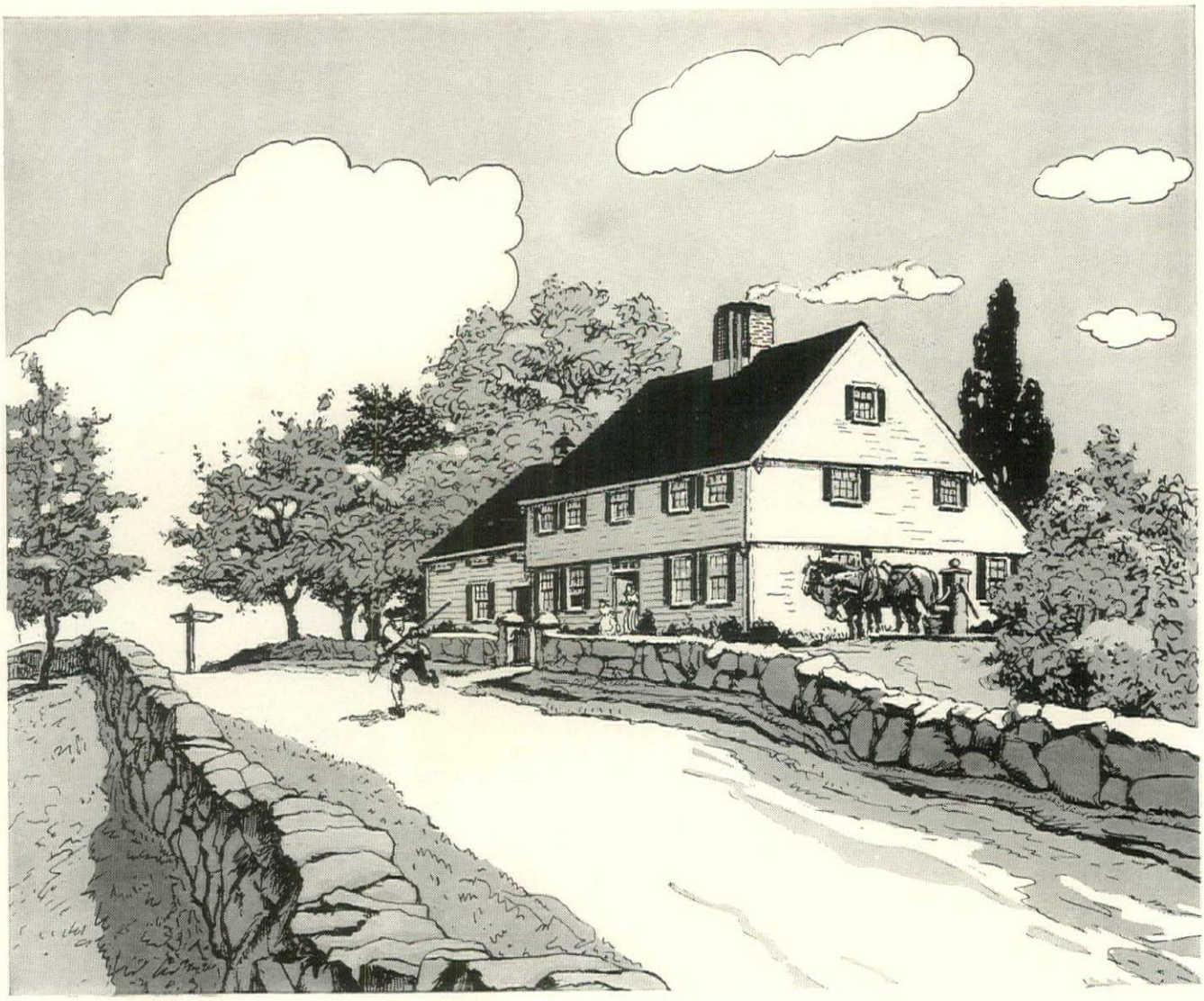
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Monument to a Battle Won



THIS monument was erected two centuries before the victory it now commemorates. Only the passing years could write its dedication — to man's conquest of the elements.

A simple homestead, built when the Nation was young, it has endured with America, become a monument to those who planned it so well and protected it with white lead paint.

Yes, Pure White Lead is the dependable ally of men who fight the weather. And Dutch Boy White Lead means paint which sturdily resists the onslaughts of rain and snow and sun . . . keeping homes and other buildings young in appearance and protected well. Paint which wears slowly, smoothly—instead of cracking and scaling — thus saving the expense of burning and scraping when it finally does become time to repaint.

And now the Dutch Boy offers architects pure white lead in two forms: The *Triple-Improved* Dutch Boy *Paste* White Lead — better than ever in whiteness, body, hiding; and the new Dutch Boy *Ready-to-Brush* Pure White Lead *Paint*.

Both are worthy of your proudest work.

NATIONAL LEAD COMPANY: 111 Broadway, New York; 116 Oak Street, Buffalo; 900 West 18th Street, Chicago; 659 Freeman Avenue, Cincinnati; 1213 West Third St., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co., 800 Albany St., Boston; National Lead & Oil Co. of Penna., 1376 River Avenue, Pittsburgh; John T. Lewis & Bros. Co., Widener Bldg., Philadelphia.



NEW DUTCH BOY WHITE LEAD PAINT— READY FOR THE BRUSH!

Now, in addition to the paste form, the proven protection of pure white lead is available in ready-to-brush paint form.

2 COAT JOB... on New or Old Wood! FORMS... Exterior Primer and Outside White!

The new Dutch Boy comes in 2 forms —Exterior Primer and Outside White. Both are 100% pure white lead paints —specially designed to do a real white lead job on new or old wood in 2 coats. You have never specified a special primer easier to brush on or a 2-coat combination that gives better leveling, sealing and hiding. And you'll give your enthusiastic endorsement to the new Dutch Boy's whiteness, gloss and finish.



SPECIFY *Dutch Boy Pure White Lead*

TAKE A LONG-RANGE VIEW

of your

ROOF CONSTRUCTION

TODAY



YEARS AHEAD

AS SIMPLE AS A-B-C



A

LAYING THE SLABS



B

CEMENTING THE JOINTS



C

APPLYING THE COMPOSITION COVERING

ALL ROOFS look the same from the top, when the weatherproof covering is in place. But what happens to the roof deck underneath as the years go by, and time and wear start working on the material of which the roof deck is made?

Why take chances with roof decks that rot, rust and disintegrate from the destructive action of moisture, smoke and fumes? Repairs are a certainty — maintenance and replacements continually add to the original cost of the roof deck, so that it becomes a constant liability instead of an asset. A

Featherweight PRECAST CONCRETE ROOF DECK

provides the only roof deck material that is structurally sound and permanent — that never requires a dollar of repairs, painting or replacements throughout the entire life of the building. No other roof deck can be classed as *investment*.

It is fireproof—lightweight—goes on FAST in any weather—enables the occupant to get under cover and into production immediately.

EMERGENCY BUILDINGS

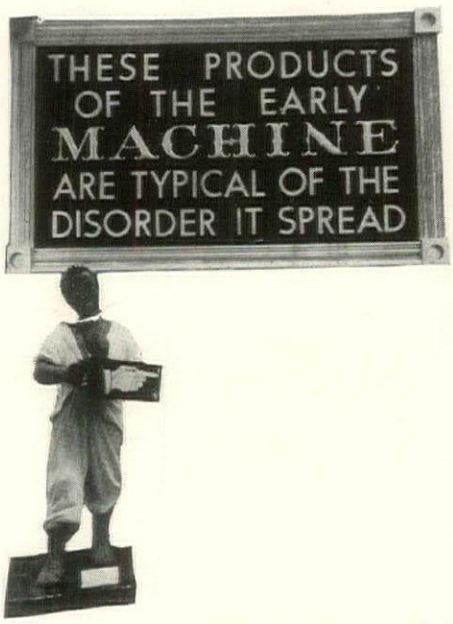
that are planned now for temporary service, are frequently used later for permanent industry. A FEDERAL ROOF installed now, will not only be safe and economical for the present, but will be ready for permanent occupancy any time in the future, *without repair or replacement*. This is fact, proven by experience.

FEDERAL-AMERICAN CEMENT TILE CO.

608 South Dearborn Street Chicago, Illinois

For Over Thirty Years — Sales Offices In Principal Cities

FORUM OF EVENTS





DESIGN DECADE

FORUM readers will remember the "Design Decade" issue of last October, a large scale survey of design developments from 1930 to 1940. Others will recall that exhibits in department stores and museums extended its scope to a nation-wide program. Last month "Design Decade" wound up in a burst of glory, with its biggest show at the Baltimore Museum of Art, and with the Art Directors' Club Medal awarded to Will Burtin for his cover design (see below) for the issue. Baltimore's exhibit, in the hands of capable, imaginative young Director Leslie Cheek, covered not only industrial design and architecture, but films, theater, dance and radio as well, and showed in dramatic three-dimensional form the contrast between present-day design and its nineteenth century background. Visitors were led through exhibit rooms whose circulation was carefully controlled, presented with dummies in nineteenth century dress, machines swathed in cheesecloth, Victorian stoves and beds, samples of modern tricycles, obstetrical instruments and office desks, telephones, typewriters and armchairs. By the technique of using comparatively few large displays, well-grouped objects and brief explanatory captions the story was told with maximum effectiveness and minimum fatigue for the visitor. A perennial crusader for good design, Director Cheek gave not only a design picture of the Thirties, but explained the difference between good and bad, and illustrated the continuity of design principles in the work of past and present.





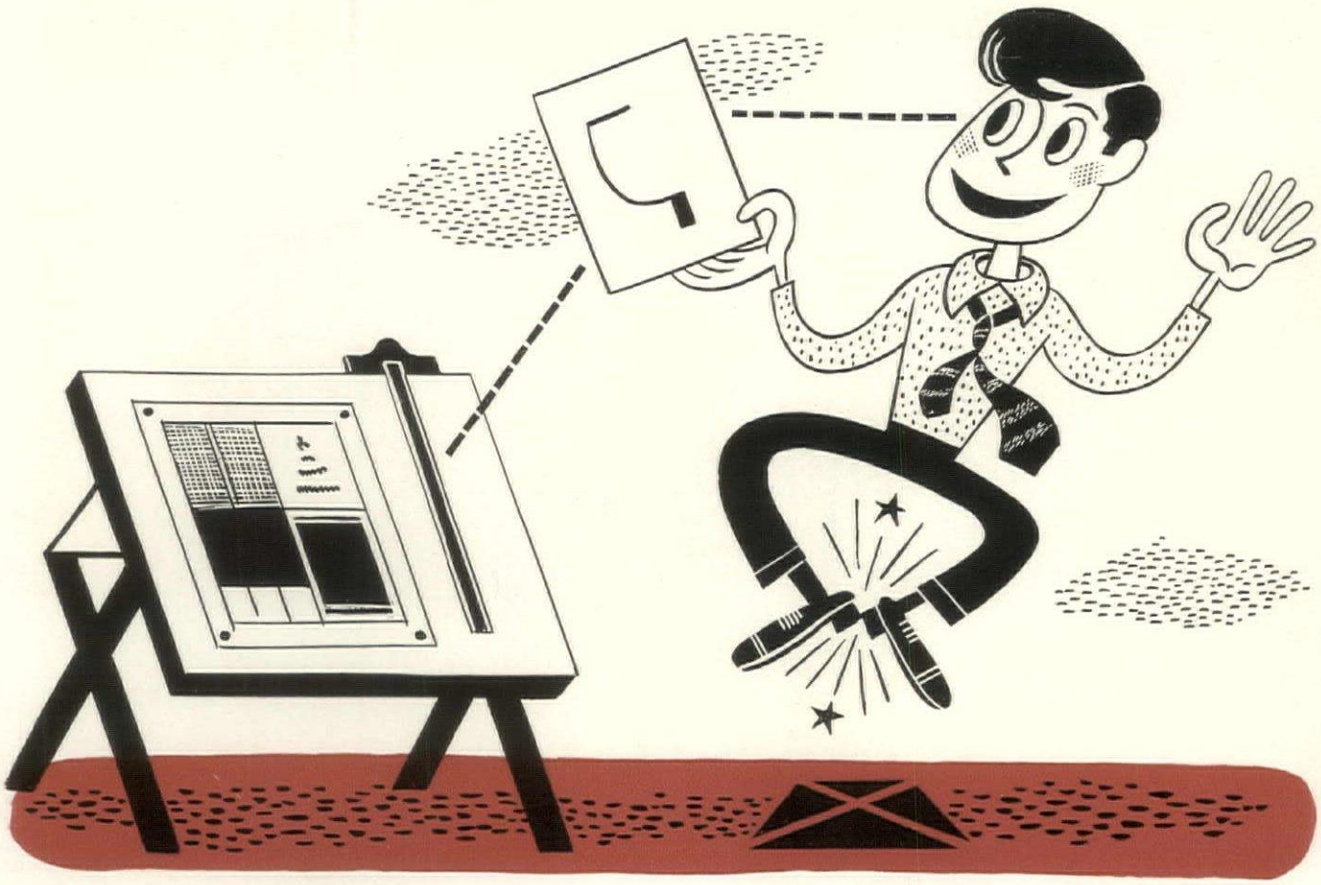




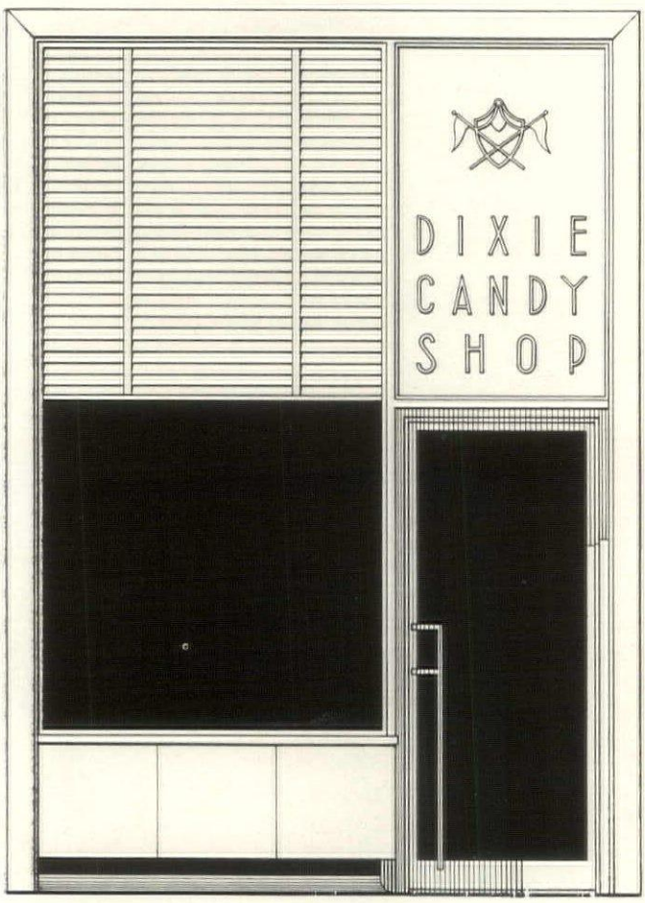
Acme

Will Burtin and his "Design Decade" cover for THE ARCHITECTURAL FORUM, rated "best magazine cover" among 4,300 entries to the annual Exhibit of the Art Directors' Club. With a background of outstanding work in Europe, Burtin came to the U. S. in 1938, has designed exhibits, teaches advertising design at Pratt Institute, works with department stores, industrial concerns, and with top-flight magazines such as *Time*, *Life* and *Fortune* and may we add, this one.

(Continued on page 12)



HOW TO DESIGN DISTINCTIVE STORE FRONTS



INSPIRATION and creative work are not to be classified and catalogued. Store Front designers operate in many ways, of course, according to their individual inclinations.

We have been told, however, that the many interesting and useful shapes available in Zouri Store Front Construction offer a dependable source of ideas for store front design. Often one or two mouldings can become the basis for the complete store front scheme.

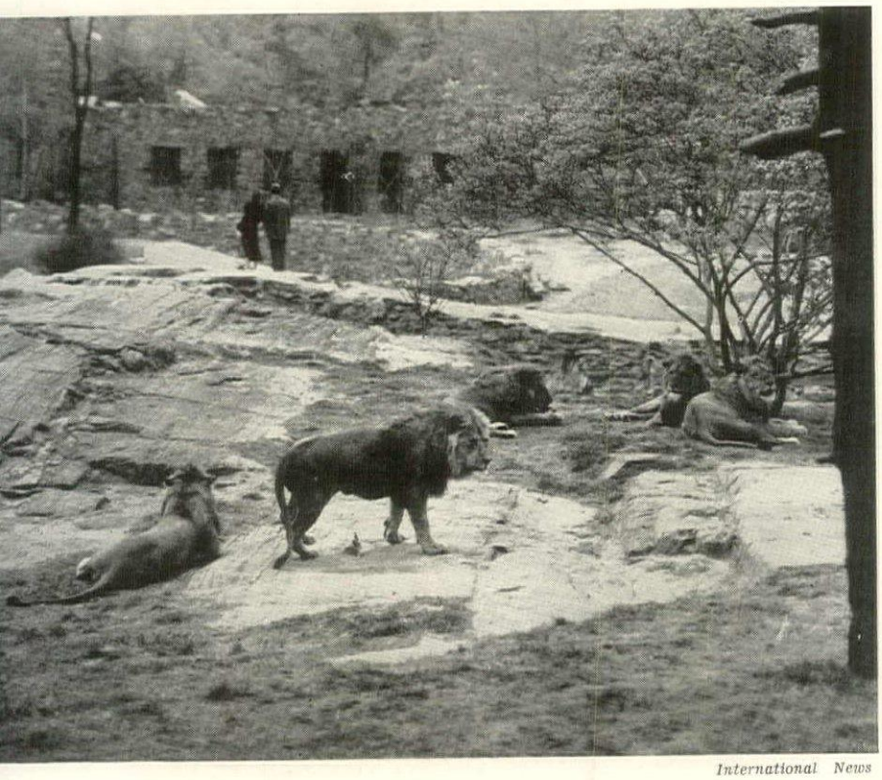
Refer to SWEET'S, or write for f. s. details. ZOURI STORE FRONTS, NILES, MICHIGAN.

ZOURI

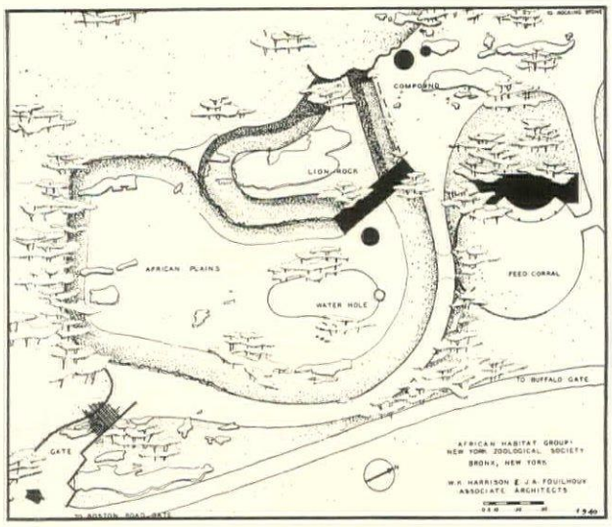
STORE FRONTS

ILLUSTRATED STORE FRONT MAGAZINE, THE ZOURI NEWS, IS YOURS FOR THE ASKING

(*Continued from page 10*)



International News



NEW ZOO

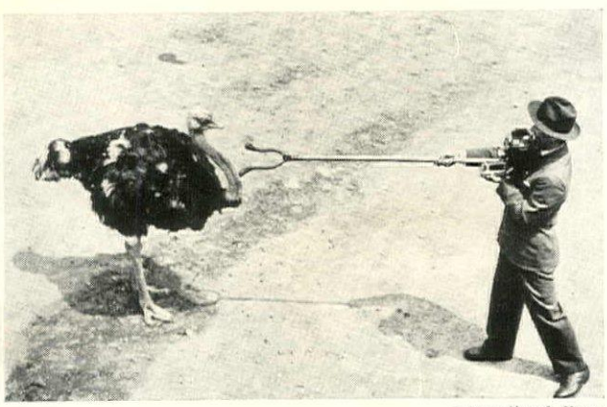
For years the Bronx Zoo, New York City's best and one of the country's largest, has limped along with its undoubtedly fine collection of animals housed in the most monumental and monumentally inappropriate aggregation of buildings this side of the Mall in Washington. Lovers of the unexpected can enjoy to the full such spectacles as elephants lumbering through the fanciest of French Renaissance archways and tarantulas sleeping under a tenth-rate Beaux Arts imitation of a tenth-rate imitation. Africa at its darkest was never like this, nor is the new "Africa" just opened. This new addition to the Zoo, designed by architects Harrison and Fouilhoux, completely eliminates barred cages, permits the public to see the animals in an exciting reproduction of their native surroundings. Such photographs as the above indicate the frequently startling success with which the design was carried out. Based on the great Zoo at Hamburg, where the system of concealed moats was first used, the design shows the animals to full advantage, has a suitably barbaric entrance (below), and includes a few authentic-looking structures for local color. New problems and possibilities for photographers are suggested by the illustration at the lower right.



Wide World



Herald-Tribune



International News

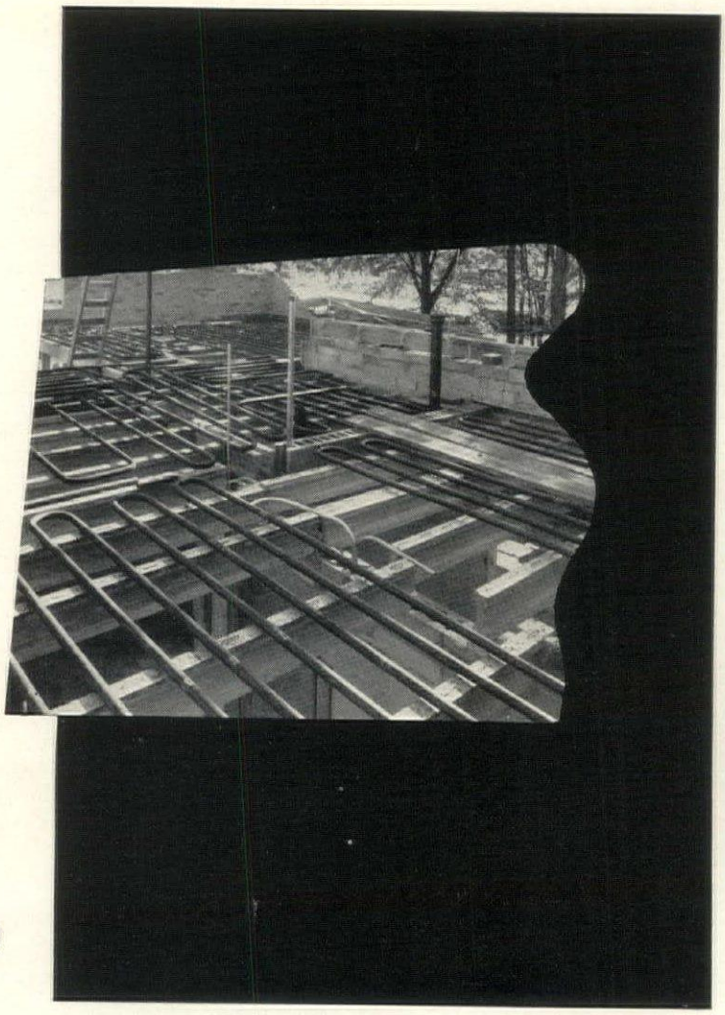
(*Continued on page 14*)

Thermal Properties?

Corrosion Resistance?



Fabrication Qualities?



are YOU asking these questions about pipe for Radiant Heating?

Because Radiant Heating is different, a new engineering approach to piping selection, as well as design, is important. Not only corrosion resistance, but thermal properties and fabrication qualities must be considered for present and future satisfaction.

WHAT ABOUT THERMAL PROPERTIES? The ideal piping material must conduct and *dissipate* heat readily . . . and its coefficient of expansion should be the same as that of surrounding material, to eliminate the danger of cracking, loss of bond, noise, and wear. As engineering handbooks show, Byers Wrought Iron Pipe dissipates almost twice as much heat as some piping materials, and its rate of expansion is practically identical to that of concrete or plaster.

WHAT ABOUT CORROSION RESISTANCE? Radiant Heating coils face corrosive attack from within and without . . . and experience definitely indicates that real protection can't be bought by using low-first-cost pipe with heavy walls, or real satisfaction obtained by saving on fabrication at the expense of heat dissipation. Byers Wrought Iron Pipe has served for years under identical corrosive conditions, and its superior durability is a matter of engineering record.

WHAT ABOUT FABRICATION? The ease and economy of fabricating Byers Wrought Iron Pipe is best suggested by the costs on several current jobs. These show an average of 30c each for shop bends; 30c each for shop welds; and 80c each for field welds . . . with roughly 20% added for testing, shipping, and handling. We can give you a list of fabricators equipped to do the work.

DO YOU HAVE FULL INFORMATION? We have revised our bulletin, "Byers Wrought Iron in Radiant Heating Installations," incorporating last-minute data. It covers the design, construction, and operation of radiant heating installations. Our General Catalog gives complete information on Byers Wrought Iron Pipe. Orders are being filled promptly; immediate shipments can be made from the stocks of our nation-wide network of distributors, or from our own warehouse stocks. The Bulletin, the Catalog, or both, will be sent on request.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Chicago, St. Louis, Houston, Seattle, San Francisco.

BYERS WROUGHT IRON

FOR EXTRA SERVICE

IN CORROSIVE APPLICATIONS

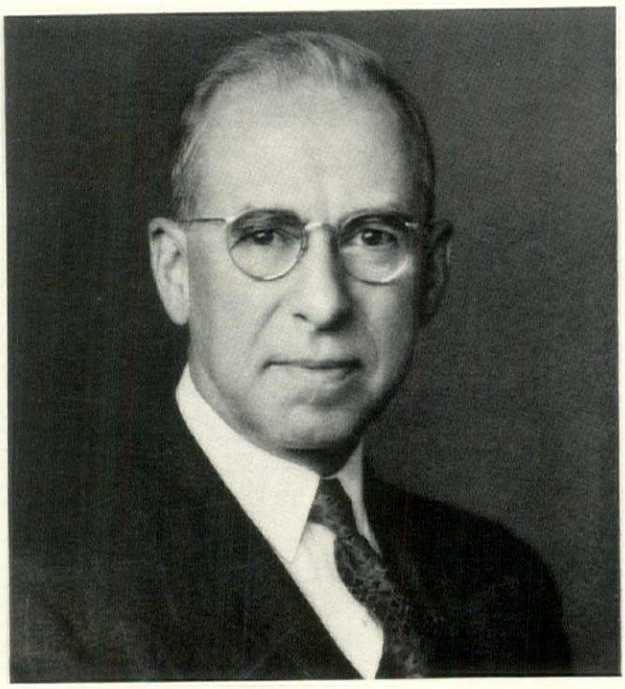
CORROSION COSTS YOU MORE THAN WROUGHT IRON

FORUM OF EVENTS

(Continued from page 12)

A.I.A. PRESIDENT

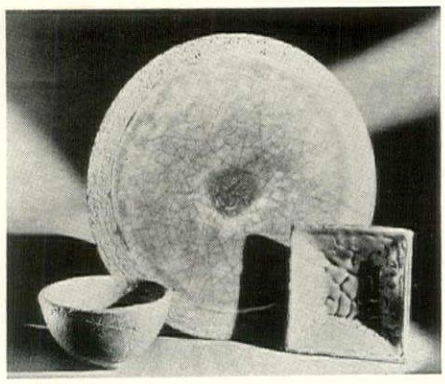
This year's convention of the American Institute took place last month, in conjunction with the Producers Council, against the spectacular background of Yosemite Valley. Convening architects discussed defense, the dangers of government bureau competition, post-war construction problems, housing, education for architects, and elected as their new president Richmond H. Shreve. Member of the noted New York firm of Shreve, Lamb and Harmon, President-elect Shreve is used to big jobs (Empire State building, Parkchester, etc.), can look ahead to a bigger one in making sure that architects are called on to defend the ramparts we watch.





Conway

Medallist. To Hugh Ferriss, the "President's Medal" of the Architectural League of New York, "for stimulating that interest in the Arts for which the League stands." Tenth to receive the award in the past 39 years, Medallist Ferriss is best known to the profession as the outstanding U. S. architectural delineator.





Courtesy, Metropolitan Museum of Art

Chinese Exhibit. The major exhibit for the spring and summer at New York's Metropolitan Museum—"The China Trade and its Influences"—fits in well with the importance of China in the news. Installed in galleries specially designed for the exhibit, it is unique in the combination of Chinese objects and productions of Western workshops in which the Eastern influence made itself felt. Exhibits include paintings, prints, tapestries, furniture, lacquer and ship models.





American Design Awards. Now in their fourth year, Lord & Taylor's annual awards for work in the design field have come to take on an importance well over their cash value ($1,000 each), are eagerly sought by designers all over the country. This year's winners: Glen Lukens, Los Angeles, for pottery; Harold Van Doren, Toledo, for a refrigerator; Lily Dache, New York, for her "half hat"; Alexander de Seversky, New York, for airplane designs. Three of the four designs are shown at the right.

(Forum of Events continued on page 68)



Outstanding Quality

PENBERTHY AUTOMATIC ELECTRIC SUMP PUMPS

MADE IN 6 SIZES

Constructed of Copper and Bronze Throughout

PENBERTHY PRODUCTS

PENBERTHY INJECTOR COMPANY

Manufacturers of Quality Products Since 1886

Canadian Plant: WINDSOR, ONTARIO

DETROIT, MICHIGAN

Read the EVIDENCE

WM. JOERN & SONS, Builders
Edgewood Park Development
FIELD OFFICE - 900 OGDEN AVE., LAGRANGE - LAGRANGE 3511

3244 N. CICER
Chicago, Ill
AVENUE 55

May 14, 1940.

Mr. McCray,
Paine Lumber Company,
Oshkosh, Wisconsin.

Dear Mr. McCray:

Our firm has been experimenting recently with the installation and finishing of Rezo doors. I thought you might be interested in knowing some of the results.

Although the carpentry involved in the installation of your doors shows practically no difference compared to the former six panel door that we had been using, there is a substantial saving in the painting of the doors. Figuring it on the basis of a three coat painting job, we found to completely finish the Rezo door, the time was 37 minutes, and on a six panel door, the time was 72 minutes, almost double. There also was a slight difference in the amount of material used, amounting to three-fourths of a gallon of paint less on the Rezo doors for sixteen doors.

Of course the reason that we had given up the six panel door originally was the question of service and maintenance after completion. On practically all of the panel type doors, where they were painted, we found that because of humidity desired in a modern house today, that this caused a contraction and expansion of the panels along the stiles, and practically every panel door job that we had required touching up by painters after completion. This annoyance and nuisance, together with the factor that our client will have lower maintenance cost in the future, was really the basis for our deciding to use Rezo type doors exclusively.

Hoping that this information might be of some interest to you, I am

Yours very truly,
WM. JOERN & SONS
By Charles E. Joern

CEJ:OJ

Mr. Chas. E. Joern is chairman of the taxation committee of the Chicago Real Estate Board—is a member of the Chicago Board of Underwriters and a director of the Chicago Building Congress.

Mr. Joern is nationally known as an important member of the real estate and building industry. His company was awarded the contract to build the LIFE Magazine fostered home in 1939 and also in 1940 in the Chicago Area.

ESTABLISHED OVER A QUARTER OF A CENTU

REZO FLUSH DOORS *the* ONLY *cell-type door, with* YEARS *of* EXPERIENC

for PROOF

I PAINT TWO DOORS TO HIS ONE . . . AND USE LESS PAINT

I HAVE TO CLEAN CORNERS- 24 OF THEM ON EACH SIDE- THAT'S 48 CORNERS -IT TAKES TIME



REZO

PATENTED FLUSH DOORS

U. S. No. 1,887,814

this *Saving* in LABOR and MATERIAL permits the use of guaranteed

REZO FLUSH DOORS

at the same installed cost as common multi-panel doors

Manufactured by **PAINE LUMBER CO., Ltd.,** *Oshkosh, Wis.*

MAKE THIS TEST – *Prove* BRIXMENT is BEST!



1 Butter one brick with Brixment mortar, colored with any good black mortar color. Then butter another brick with mortar made with 50-50 lime and cement, and the *same* mortar color.



2 Set both brick aside for a couple of weeks. You'll find that the sample made with Brixment mortar retains its full, rich color (right), while the other turns dull or pale.

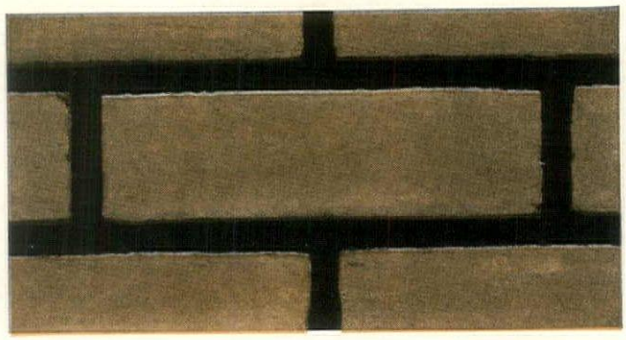
BRIXMENT *Does Not Fade Mortar Colors!*

The permanence of the mortar color in the joint depends not only upon the pigment selected but also upon the mortar materials. Too frequently a good job of brickwork is spoiled by the use of a mortar that fades the color or that leaves a white scum of efflorescence on the mortar joint.

Brixment helps prevent this condition. For Brixment is practically free from the aggressive chemical compounds or soluble salts so frequently the cause of fading and of efflorescence.

The waterproofing material combined with Brixment during manufacture is a further protection to the color because it helps prevent moisture from penetrating the mortar joint and leaching out the pigments.

Brixment is therefore recommended by manufacturers of both mortar colors and face brick, for use with their products.



BRIXMENT

For Mortar and Stucco

Louisville Cement Company, Incorporated, Louisville, Kentucky. Cement Manufacturers for Over a Century.

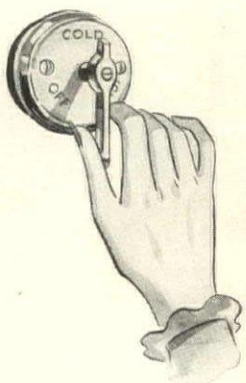


"Times Square"

brings distinction to the Master Bathroom



• *Owners point with pride – tell their friends – promote your interests*



Another Aid to Ease –

NEW "TRITON" MIXER WITH DIVERTER SPOUT

• *A single handle mixes water quickly to desired temperature. . . . Knob on spout is raised to divert water to shower head.*



This bath "sells itself" to those who want something new, different, distinctive. Being square (4′ x 4′), it allows effective use of floor space, as for storage closets and bathroom furnishings.

Its practical features add to bathing safety and luxury: easy corner seat, extra standing space, flat bottom, low side, sloping back rest. Net result – better bathing for all the family!

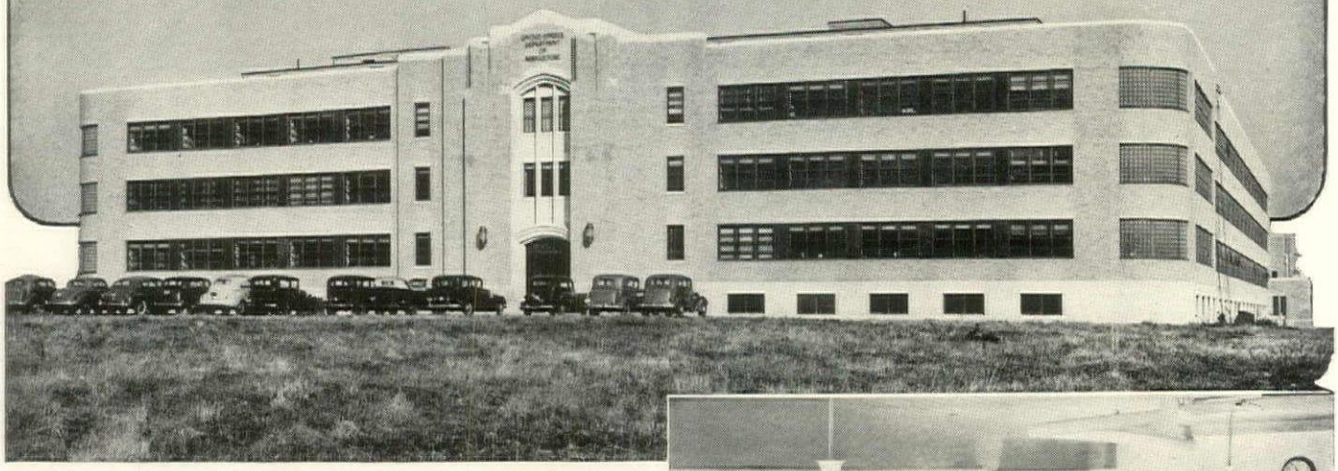
You can direct the unique advantages of "Times Square" to your own business interests. Get all the facts, NOW, about this and other first-quality fixtures and fittings. Kohler Co. *Founded* 1873. Kohler, Wis.

KOHLER OF KOHLER

PLANNED PLUMBING AND HEATING

MULLIONS OF ALBERENE TREMOLITE

Enhance Appearance and Assure Economy



U. S. Dept. of Agriculture, Regional Research Laboratory Building at Wyndmoor, Pa., showing mullions of Alberene Tremolite.



One of the rooms in the Wyndmoor, Pa., building. Typical of all the rooms in all of the laboratory buildings.

Taking advantage of the color of this quarried stone, the designers of the Dept. of Agriculture Regional Research Laboratories, at Wyndmoor, Pa., Peoria, Ill., and New Orleans, La., used mullions of Alberene Tremolite to accentuate the horizontal lines of the window sections. The fact that Tremolite can be cut in sections as thin as 7/8" made for economy in installation. The durability and weather-resistance of the stone is recognized and maintenance costs will be negligible.

Grade 25 Alberene was chosen for all working surfaces, table tops, shelving, and coved sinks in the Regional Research Laboratories at Peoria, New Orleans, and San Francisco, as well as at Wyndmoor, Pa. The layout and equipment shown are typical of each of the more than 150 rooms in the four buildings. Rubbed down with oil Grade 25 Alberene takes a permanent high sheen ... sleek and dark.

A request on your business letter-head will bring you samples, conveniently boxed, showing the range of stones, including black and mottled dark blues and greens, from the Alberene quarries. Please address Alberene Stone Corporation of Virginia, 419 Fourth Avenue, New York. Quarries and mills at Schuyler, Va. Sales offices in principal cities.

NO WORRIES ABOUT DELIVERY!

Speed is the order of the day in construction as well as in production. There will be no bottleneck ... no delay ... in your schedules if natural, quarried, stones from the Alberene Quarries are specified ... and they will outlast the building.

Alberene

TREMOLITE

MODERATE IN COST ... NEGLIGIBLE IN UPKEEP

The **TRINITY** *Brand from* **3** *Plants:*

HOUSTON, DALLAS AND FORT WORTH, TEXAS

REG. U.S. PAT. OFF.

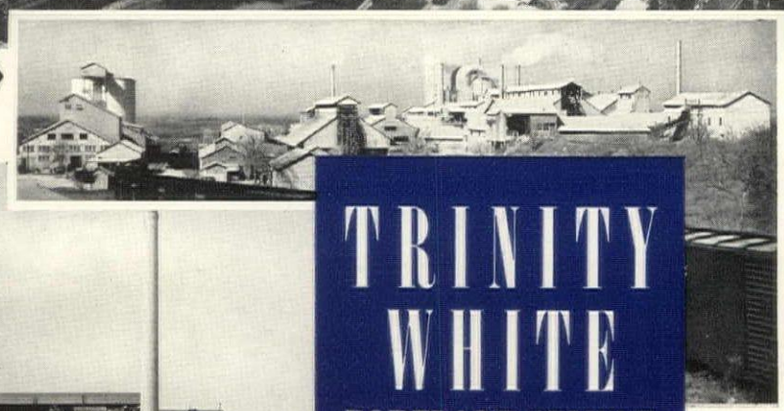
TRINITY WHITE Portland Cements, plain and waterproofed . . . America's newest and finest white cements . . . are the latest additions to the TRINITY Brand, made by one of the largest and oldest portland cement manufacturers in the Southwest. TRINITY WHITE is being marketed nationally. Other TRINITY products, widely known and used throughout the Southwest, are *Trinity* Portland Cement; *Trinity High Early Strength* Portland Cement; *Trinity Inferno* Oil Well Portland Cement; and *Trinity Mix* Masonry Cement. TRINITY PORTLAND CEMENT COMPANY, Republic Bank Building, Dallas, Texas.

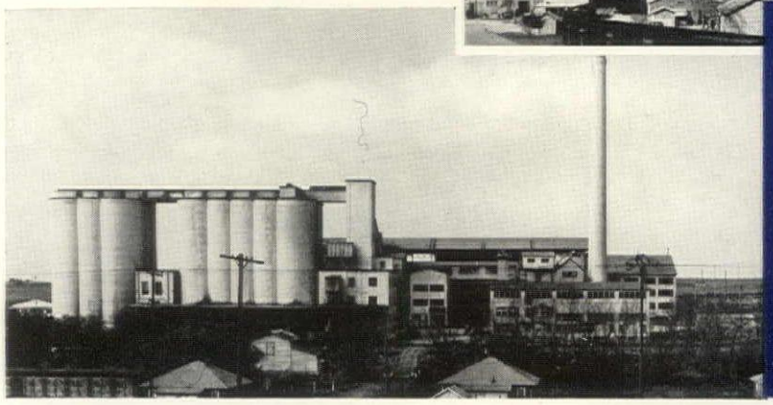
Houston - The "Home" of
TRINITY WHITE
The New Star of White Cements!



The Dallas Plant ➧

The Fort Worth Plant ➧

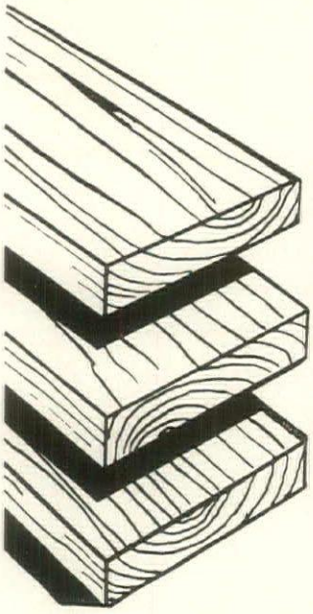




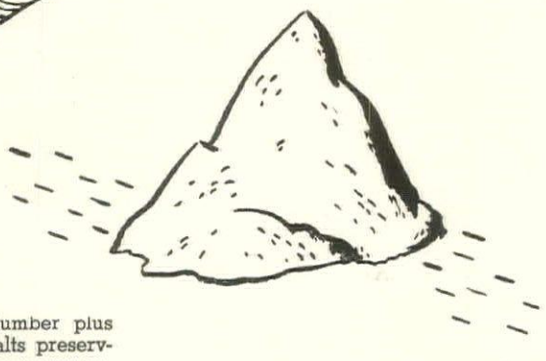
TRINITY WHITE

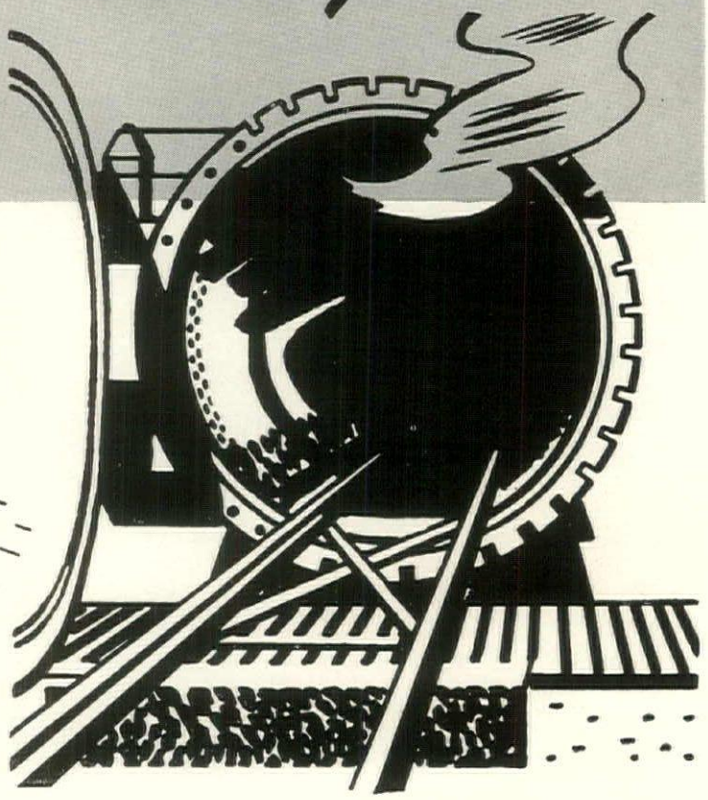
PORTLAND CEMENT

Plain or Waterproofed



HERE'S WHAT MAKES IT LUMBER WITH A *Plus*





Ordinary lumber plus Wolman Salts preservative plus vacuum-pressure impregnation.

Take ordinary lumber, impregnate it with Wolman Salts* preservative driven deep into the wood, and that's Wolmanized Lumber*. Proof against spoilage by rot and termite attack; lumber with a plus.

It's no simple dipping treatment, this Wolmanizing process. The wood is sealed in large steel cylinders and subjected to alternate vacuum and pressure, causing it to become deeply saturated with the preservative. Washing-out or leaching is prevented by "fiber fixation."

Methods are scientifically controlled and the products of the nineteen Wolmanizing plants throughout the country are checked by one central laboratory. Uniformity of product is thus assured.

Thus treated, the lumber is clean, odorless and easy to handle. It can be painted. It is distributed through retail lumber dealers under the one trade name — Wolmanized Lumber. AMERICAN LUMBER & TREATING COMPANY, 1647 McCormick Building, Chicago, Illinois.

*Registered Trade-Mark

Wolmanized

LUMBER

WOLMANIZED CERTIFIED PROTECTED AGAINST DECAY & TERMITES A. L. & T. CO.

KOOLSHADE*

SAVED US A COOL $4,000 ON OUR AIR CONDITIONING

...says Plaza Hotel Owner



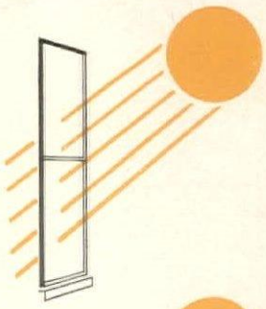
The Plaza Hotel, Corpus Christi, Texas . . . All guest room windows on sun exposures equipped with KOOLSHADE Sun Screen.

When it was decided to air condition the Plaza Hotel guest room floors, the engineers recommended that the job should be figured two ways: with inside Venetian Blinds and with KOOLSHADE Sun Screen.

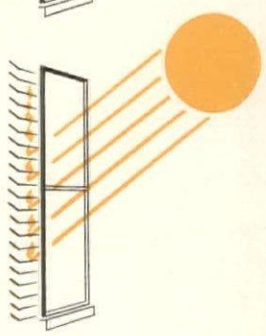
"The result," stated Mr. Jack White, owner of this and other leading Texas hotels, "was just like finding $4,000, for the enormous reduction in sun load by KOOLSHADE enabled us to save $4,000 on the equipment installation, compared with Venetian Blinds. And, according to conservative calculations, our operating expenses will be reduced by $45 per month. Other factors considered in favor of KOOLSHADE were: positive and dependable automatic operation; long life and practically negligible maintenance cost; fire safety; and —very important to us—relief from fading of draperies, rugs and furniture in the rooms."

COMPARATIVE FIGURES FOR TYPICAL FLOOR, PLAZA HOTEL

WITH BARE WINDOW, SOLAR LOAD equivalent to 4.51 TONS per floor



WITH VENETIAN BLINDS, SOLAR LOAD equivalent to 2.79 TONS per floor



WITH KOOLSHADE SUN SCREEN, SOLAR LOAD equivalent to 1.07 TONS per floor



The above data refers to typical Plaza Hotel floors having 306 sq. ft. of glass area on the East exposure—at 8 A.M.

• *There are* KOOLSHADE *Sun Screen Distributors in all principal cities, with competent representatives ready to counsel with you on problems of application, framing and installation. (In Eastern Canada, distributed by Creswell-Pomeroy, Ltd., Montreal.)*

Ingersoll KOOLSHADE* SUN SCREEN

"It's Cooler in the Shade!"

*Trade Mark . . . Property of Ingersoll Steel & Disc Division, Borg-Warner Corporation

Ingersoll Steel & Disc Division
Borg-Warner Corporation, Dept. F-6
310 So. Michigan Ave., Chicago, Illinois.

Please send your SUN HEAT DEMONSTRATION KIT (without charge) and also complete KOOLSHADE Sun Screen literature.

Name .....

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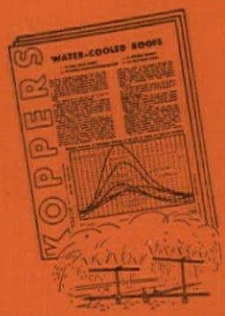
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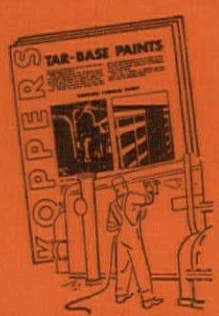
HOW TO BUILD COAL TAR PITCH AND FELT ROOFS



HOW WATER COOLED ROOFS AIR CONDITION WINDOWLESS FACTORIES



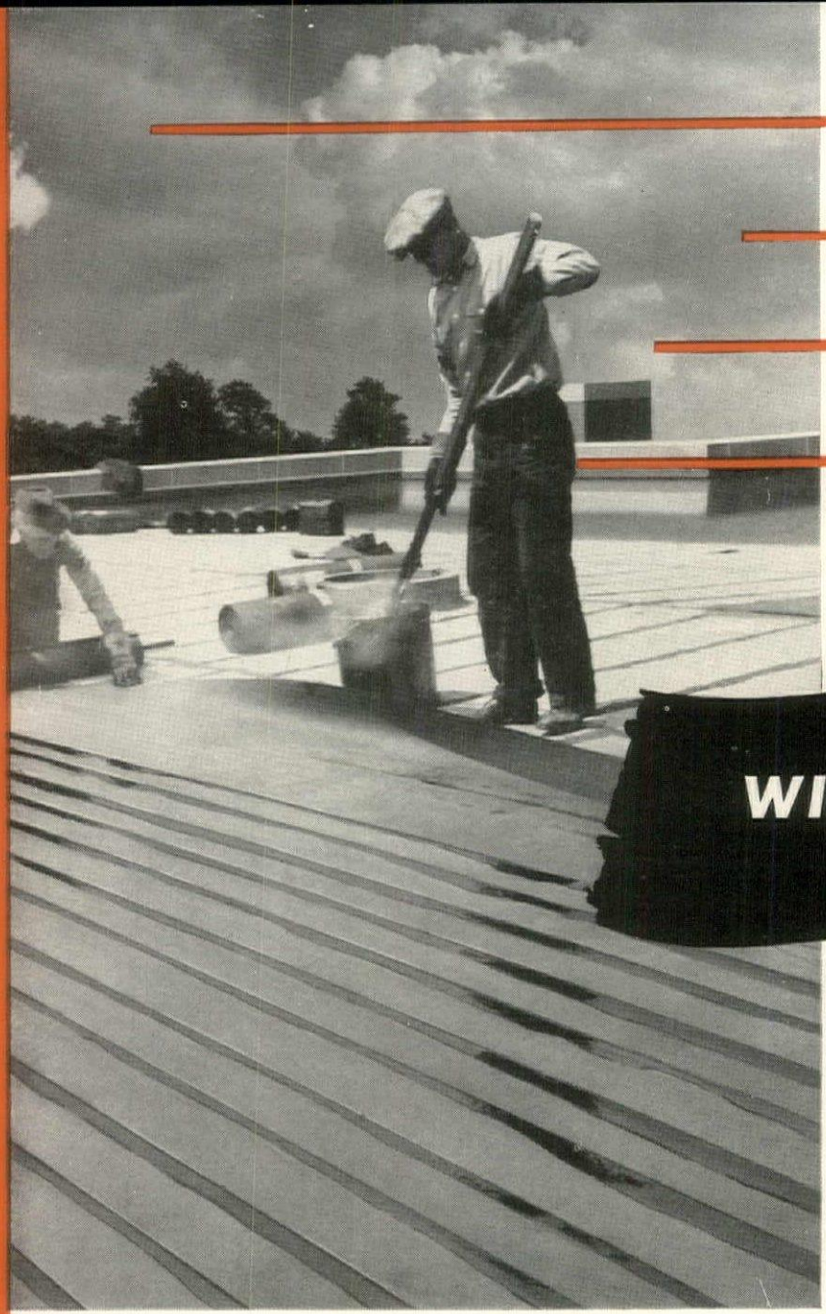
HOW PRESSURE-TREATED TIMBER CAN CUT CONSTRUCTION COSTS



HOW TO GET REAL DAMPPROOFING ACTION FROM PAINT



HOW TO TEST DEPTH OF PENETRATION IN PRESSURE-TREATED TIMBER



Some roofs going on now will last 20-30-40 years . . . and some won't

WILL YOURS?

The past is the best guide to the future. The records from the past show that *one type* of roofing accounts for most of the record for long service life among built up roofs . . . the records of 20-3 or even 40 years. That one type o roofing is Coal Tar Pitch. Why d Coal Tar Pitch Roofs last? Ther are three principal reasons:

1. Coal Tar Pitch Lasts because it can resist water. Water lying in low spots on roofs has ruined many a roof . . . but coal tar pitch can resist this so well that water is actually pumped up to Koppers Coal Tar Pitch Roofs to cool the buildings.

2. Coal Tar Pitch Lasts because it can heal small breaks. If vibration, settlement of the building, etc. causes small breaks in your roofing surface, those breaks will heal themselves, if your roof is coal tar pitch.

3. Coal Tar Pitch Lasts becaus its slag or gravel surface pro tects it from the sun, hail an wind damage. The heat transmis sion coefficient of a built-up roo without slag or gravel has bee measured at 2½ times that of slag or gravel surfaced roof.

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KOPPERS COMPANY **TAR AND CHEMICAL DIVISION** **PITTSBURGH, PA**

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1321 Koppers Building, Pittsburgh, Pa.

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- ☐ "Roofing Specifications"
- ☐ "Water-cooled Roofs"
- ☐ "Steep Roofs of Coal Tar Pitch"
- ☐ "Roofing Bonds"
- ☐ "Waterproofing Specifications"
- ☐ "Dampproofing Specifications"
- ☐ "Tar-base Paints"
- ☐ "Waterproofing and Dampproofing Waterworks"
- ☐ "Waterproofing and Gasproofing Sewage Disposal Plants"
- ☐ "Where to Use Pressure-Treated Timber"
- ☐ "How to Measure Depth of Penetration in Pressure-treated Timber"
- ☐ "Pressure-treated Poles"
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- ☐ "Creosote-Coal Tar Solutions"
- ☐ "Disinfectants"
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Talk about Tiffany . . .

YOUNGSTER: *Say, what can* I *learn from the Tiffany Building?* My *next assignment will probably be a delicatessen.*

OLDSTER: Listen to the infant! What, for instance, do you know about Kentile—asphalt tile—a flooring they used plenty of?

YOUNGSTER: *Gosh,* another *one of those new products! I'll never learn.*

OLDSTER: New? *Jiminy crickets,* old Dave Kennedy started making Kentile 15 years ago! And you ought to see how swell some of those 14 and 15 year old floors still look.

YOUNGSTER: *And I suppose you think* that *stuff will fit into* MY *pre-shrunk budget?*

OLDSTER: You can't buy anything as practical for *less.*

YOUNGSTER: *Well, then you'll razz me for not thinking about the problem of falling grease and fats and . . .*

OLDSTER: I certainly will—if you don't specify *greaseproof* Kentile. Oils and fats just won't stain Greaseproof Kentile.

YOUNGSTER: *But I can't just be* practical. *I'm an ARTIST—I want color, pattern,* beauty!

OLDSTER: If you can't get the right effect with Kentile's 44 colors go back to school. Maybe you should, anyway.

YOUNGSTER: *I'm weakening . . . but . . . but . . . supposing this floor has to go on concrete in direct contact with earth? You know I usually get the basement jobs.*

OLDSTER: Then asphalt tile is the *only* thing you should use. Moisture never harms Kentile.

YOUNGSTER: *Alright . . . alright . . . so now I know about Kentile.*

OLDSTER: Jumping Jehosaphat, you're just *beginning* to learn. But I can't be your tutor forever. *You* learn ALL about that perfect flooring for yourself. Believe me, there's *plenty* to know about Kentile.

KENTILE
Asphalt Tile



David E. Kennedy, Inc. Dept. F.
58 Second Ave., Brooklyn, N. Y.

Please send Kentile catalogue giving full, detailed facts — showing all 44 colors.

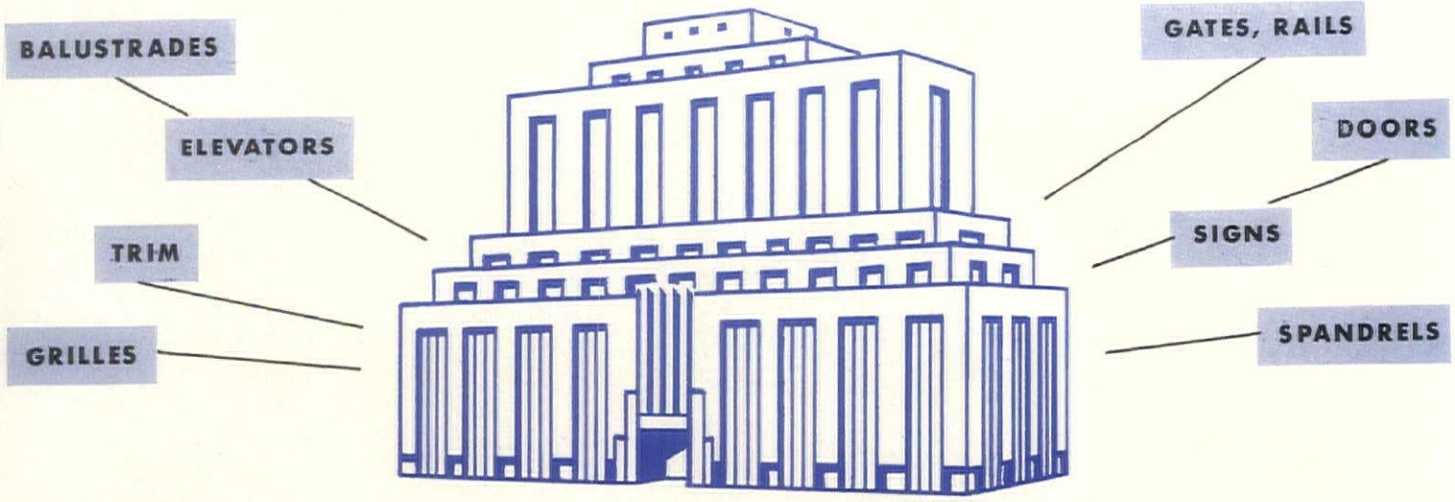
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How Stainless Steel serves *in industrial buildings*

INDUSTRIAL architects and designers are rapidly adopting stainless steel for exterior and interior construction and trim. This lustrous metal is rust-proof and corrosion-resistant . . . resists scratching and denting . . . can be cleaned easily by washing . . . is inexpensive, considering its long life. The many available forms of stainless steel can be readily fabricated by welding into interesting shapes and designs.

Although we do not make steel, we have for over 35 years produced "Electromet" ferro-alloys and metals used in making steel. With the knowledge accumulated from this experience, we are in a position to give impartial assistance to architects, designers, and others who work with steel. If you are interested in the manufacture, fabrication, or use of steel of any kind for a specific purpose, consult us.

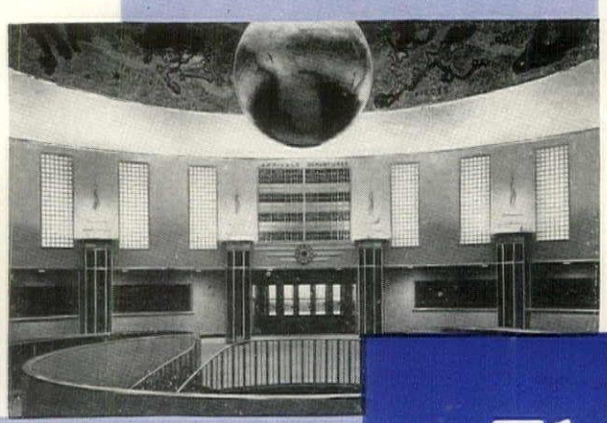
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Above: The satiny luster of these stainless steel elevator doors in the lobby of the Architects Building gives the interior a subdued glow. *Right:* Light, structural applications of stainless steel are used for the building's large entranceway.



The stainless steel canopy, letters, and trim on this building will remain bright and attractive indefinitely.



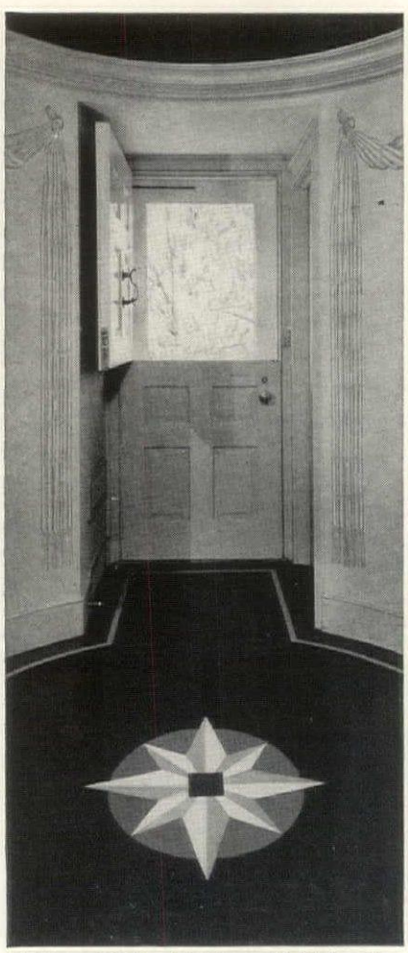
The lasting beauty of stainless steel enhances building interiors at New York's Municipal Airport.



Electromet
Trade-Mark
Ferro-Alloys & Metals



NAIRN LINOLEUM PREDOMINATES in the modern kitchen of theWebb residence. The floor is Nairn Veltone Linoleum, with one-piece cove-base and border beneath the cabinets, a sanitary feature because dirt-collecting cracks are eliminated. Walls are a cheerful pattern in Nairn Wall Linoleum, built to last as long as the house itself. To complete the Nairn "ensemble," Nairn Linoleum is used on sink and counter tops.



A floor of Nairn Linoleum, highlighted by a custom-cut Inset lends beauty and dignity to the entrance foyer.

NAIRN LINOLEUM FURNISHES THE KEY TO THESE

3 Charming decorative schemes

When Nairn Linoleum Floors were selected for the Stuart Webb residence, Mystic, Conn., lasting beauty was assured for the entrance hall, kitchen and bath.

These three charming and distinctive decorative schemes were made possible because Nairn Linoleum is completely flexible and adaptable to any structural design.

When installed by Authorized Contractors, Nairn Linoleum, both for floors and walls, is fully guaranteed.

CONGOLEUM-NAIRN INC. KEARNY, N. J.

NAIRN

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LINOLEUM

Floors and Walls



The bath features Nairn Wall Linoleum, with a Nairn Floor enhanced by a white feature strip.

ALUMINUM, DEFENSE, AND YOU

3

IT IS EASY TO UNDERSTAND ABOUT ALUMINUM AND DEFENSE

THE WHOLE THING BOILS DOWN to two simple questions:

1. **How much aluminum** are America and England going to need?

   There is only one answer: The democracies must have *all the aluminum it takes to win*, and nobody knows how much that is.

2. **How fast** is aluminum needed?

   We don't know, for sure, but just as fast as the aircraft plants, munition plants, shipyards, and the like, can be expanded to use aluminum and other materials for defense purposes.

THOSE IN AUTHORITY IN WASHINGTON are putting together, day by day, expert estimates of what all these defense industries are going to need, month by month, clear to the end of 1942. These estimates, as issued, are our book of rules.

FOR MONTHS WE HAVE BEEN, and are now, delivering aluminum for defense purposes far in excess of that called for by prior estimates.

DEFENSE IS NOW TAKING from us over 40 million pounds a month. Every American ought to have a picture of just how much aluminum that is; here it is:

Peace-time America, during the nine years from 1930-8, could find use for only 14 million pounds a month from us.

In the busy year of 1939 we had to make only 27 million pounds a month to satisfy the civilian needs of this prospering country.

Suddenly, defense alone needs 40 million a month! 14 million (civilian), to 27 (civilian), to 40 (defense) and soon to 50 and beyond!

★ ★ ★ ★

YOU CIVILIAN USERS of aluminum are grand people.

THE WAY YOU ARE DOING WITHOUT aluminum until producers can catch up again with civilian uses is typically American. We are sincerely grateful for your understanding.

IN THIS RECESS you are having to scramble for **RECESSITIES**—other materials which just don't fill the bill 100%, because there is no pat substitute for aluminum.

IT'S TOUGH ON YOU and it's hard on us to have to turn away temporarily from the friends and pursuits of a lifetime.

WE HAVE NOT TURNED OUR BACKS!

WE INTEND that no civilian shall have to forego the things aluminum can do best one minute longer than we can help.

ALUMINUM COMPANY OF AMERICA



★

PLYFORM

serves as sheathing and lining combined

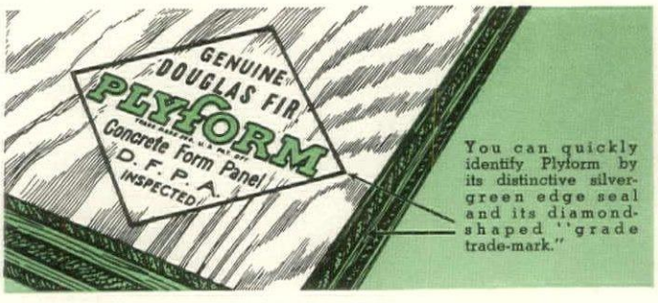
It forms smooth, flawless concrete surfaces at lower cost!

When you're designing structures with exposed concrete surfaces, specify that the concrete be formed against Plyform, the grade of Douglas Fir Plywood made especially for concrete form work.

Here's why: Plyform comes in big, rigid panels that serve as sheathing and lining combined. Its light weight makes handling easy. No special bracing or construction is required. In fact, Plyform is quickly and easily worked with all tools . . . can be nailed without boring holes. When handled with reasonable care, Plyform gives numerous re-uses . . . and can then be salvaged for sub-flooring or other utility purposes.

Plyform imparts a smooth, even texture to masonry. Because of its non-absorbent, uniform surface, concrete formed against it is not mottled, stained or colored. Joints and fins are absolutely minimized; costs of rubbing labor is cut from 5c to 12c a square foot.

For additional information, consult Sweet's Catalog . . . or write Douglas Fir Plywood Association, 1500 Tacoma Bldg., Tacoma, Wn., for free Concrete Form Booklet or technical assistance.



Why Plyform Panels are Better

1 Plyform is manufactured in strict accordance with U. S. Commercial Standard CS45-40, by Association Mills. Only special highly water-resistant premium glues are used. The cores of the panels are better than those used in standard interior types of Douglas Fir Plywood. The faces are similar in appearance to SO2S Plypanel but must be at least 1/8" thick before sanding.

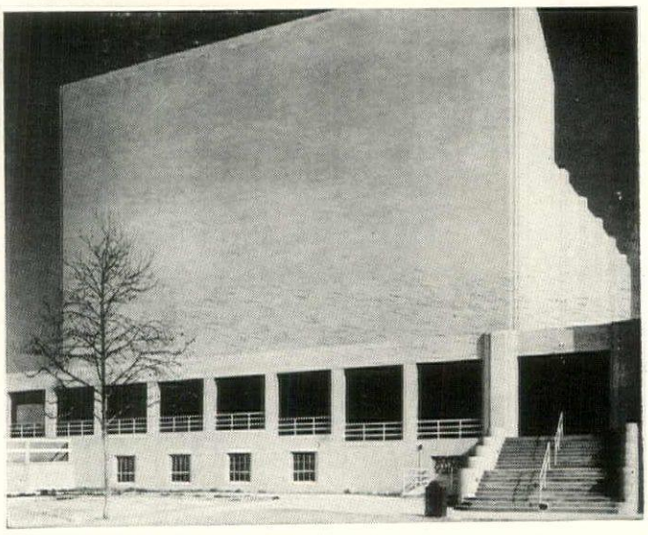
2 Both sides of every Plyform panel are usable for forming smooth concrete surfaces. Plyform serves as sheathing and lining combined.

3 Every panel is sanded satin-smooth, oil-treated and edge-sealed at mill.

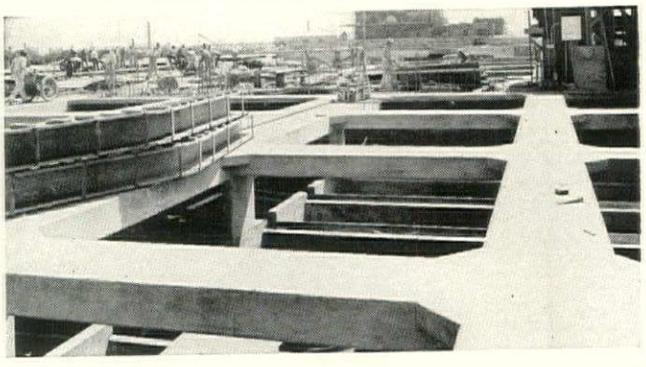
4 The distinctive silver-green edge seal and the diamond-shaped "grade trade-mark" stamped on every Plyform panel are positive, instant identifications of a genuine Plyform panel. Specify Plyform on your next job.



FOR THE HIGHEST TYPE OF ARCHITECTURAL CONCRETE The new Whittier Union High School in Whittier, Calif., is one of the most beautiful architectural concrete buildings in the nation. The flush, unblemished surfaces were formed against satin-smooth, rigid, labor-saving Plyform.



EVEN THE BACK LOOKS GOOD! This rear view of the Whittier Union High School is strikingly beautiful, too . . . proving that when Plyform is used, all surfaces can be flawless. Wm. H. Harrison was the architect for this school; J. K. Thomas, the contractor.



FOR MAXIMUM RE-USES! The concrete in this filter station of the Metropolitan Water District in San Dimas, Calif., is being formed against the exterior type of Plyform because maximum re-uses were desired. EXT-DFPA Concrete Form Panels have proven they can be re-used as many as 50 times—give truly economical performance.



"Smooth as concrete formed against Plyform"

DOUGLAS FIR PLYWOOD
Real Lumber
MADE LARGER, LIGHTER
SPLIT-PROOF
STRONGER

GENUINE DOUGLAS FIR PLYFORM Concrete Form Panel D. F. P. A. INSPECTED

GENUINE PLYWALL Douglas Fir Plywood WALLBOARD D. F. P. A. INSPECTED

SPECIFY DOUGLAS FIR PLYWOOD BY THESE "GRADE TRADE-MARKS"

PLYPANEL D.F.P.A.

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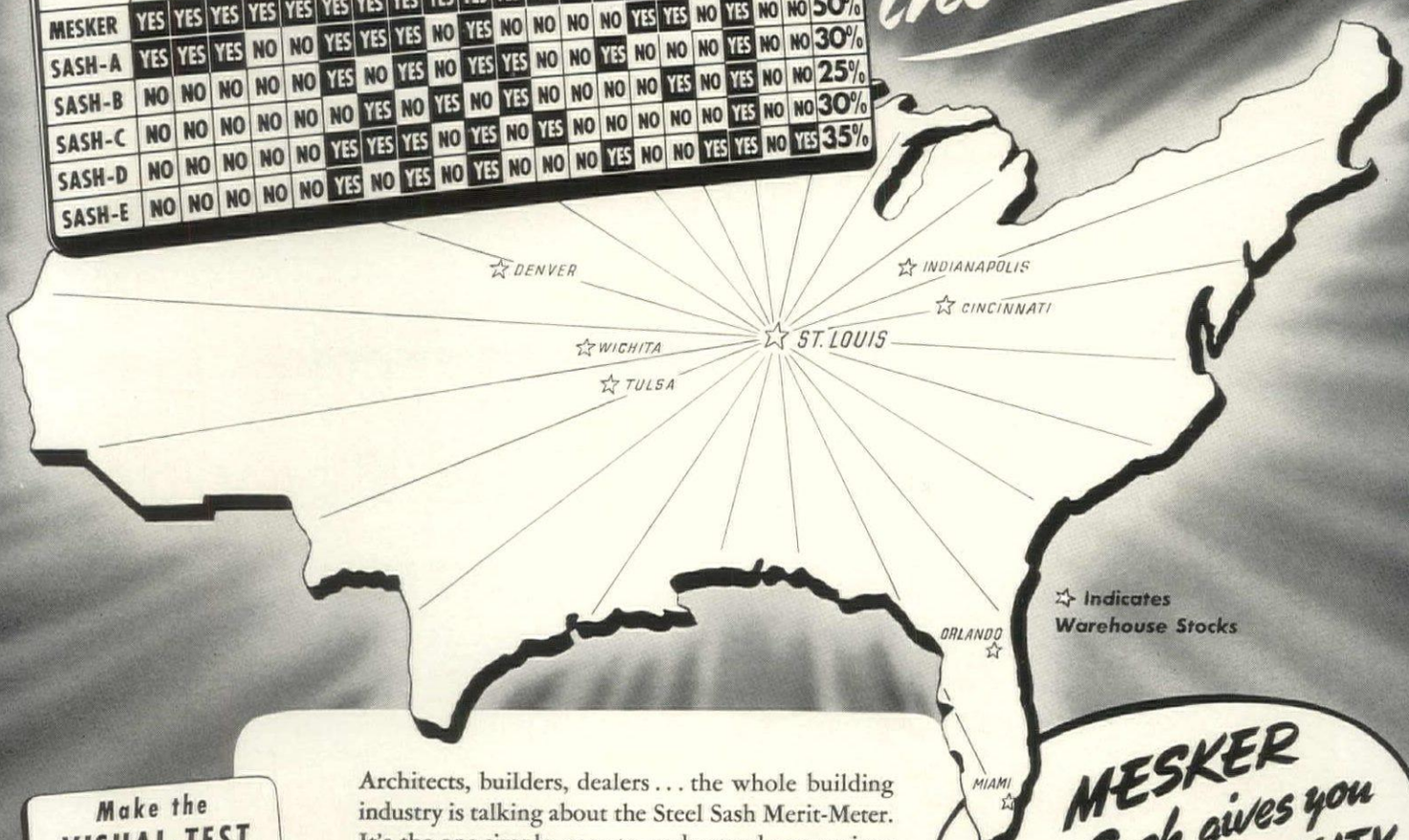
GENUINE PLYSCORD SHEATHING D. F. P. A. INSPECTED

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MESKER	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES	YES	NO	85%
SASH-A	YES	YES	YES	NO	NO	YES	YES	YES	NO	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	NO	50%
SASH-B	YES	YES	YES	NO	NO	YES	NO	YES	NO	YES	YES	NO	NO	YES	NO	NO	NO	YES	NO	NO	30%
SASH-C	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	NO	YES	NO	NO	NO	YES	NO	YES	NO	NO	25%
SASH-D	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO	YES	NO	YES	NO	NO	NO	YES	YES	NO	NO	30%
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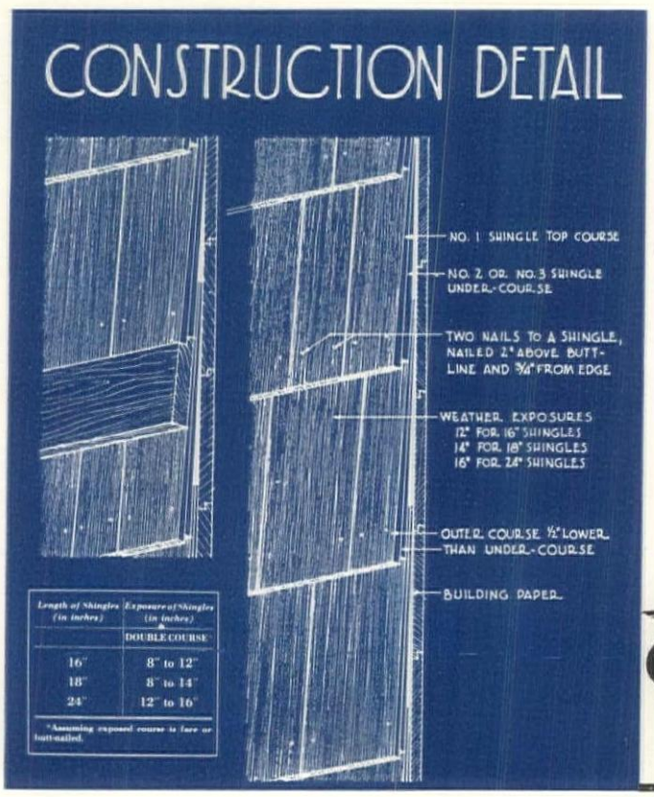
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Birge and David Clark, *Architects, Palo Alto, Calif.*

Double-Coursed Walls Provide Excellent Insulation



TESTS made in the laboratory of the College of Forestry, University of Washington, on a roof section of No. 1 grade, 18-inch Certigrade Shingles, laid 5½ inches to the weather on solid wood sheathing, show that such construction is twice as effective in preventing heat transmission as the best grades of ½-inch insulation boards commonly used for this sheathing.

What is true of roof construction is equally true of sidewall construction. Double-coursing of sidewalls with Red Cedar Shingles on solid wood sheathing gives you a *sturdy wall of good insulative qualities.* The method of slightly lapping the outer course of shingles over the under-course produces beautiful, deep shadow lines, and this, with the economical, wide weather exposure possible with double-coursing, is in keeping with modern design in home building.

Complete data sent on request, address Red Cedar Shingle Bureau, Seattle, U.S.A., or Vancouver, B.C.



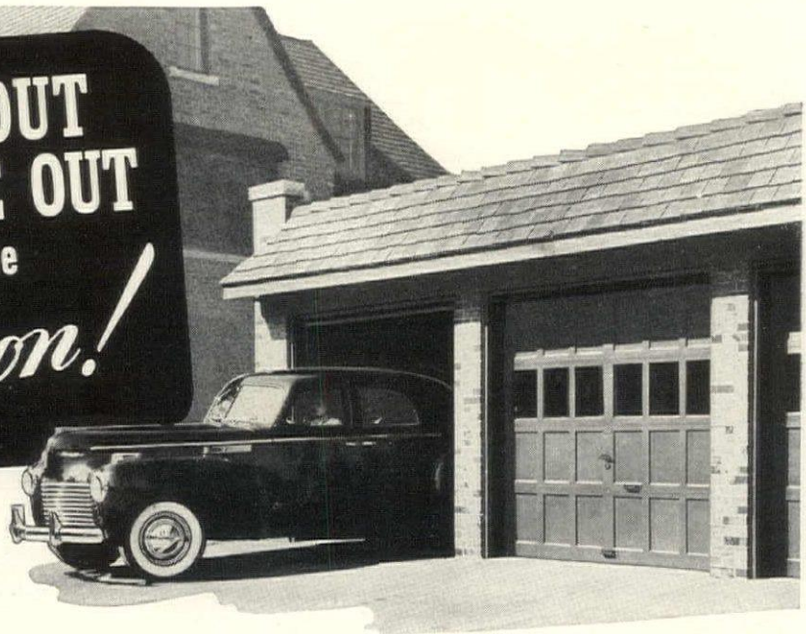
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with Trouble-Free
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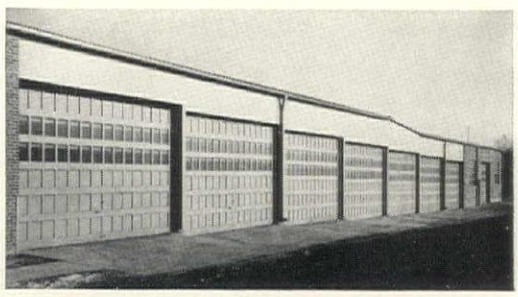
Attractive three-car garage equipped with Ro-Way Overhead Type Garage Doors. Architects, Aldrich & Aldrich, Galesburg, Ill. Contractor, John Dahlberg, Galesburg, Ill.

That's the Dependable Service Car Owners find with

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OVERHEAD TYPE DOORS

You wouldn't be satisfied today with the kind of a motor car you thought was the "pick of the market" 5 years ago. You want the later improvements, because you know how much they add to the service and satisfaction you get. Things have been happening in the Garage Door Field, too. See the Ro-Way Overhead Type Door and you'll get what we mean. Listen to its quiet operation. Feel the added strength of "Tailor Made" Spring Power that seems to say, "Stand back! Let me do *all* the lifting." Then examine those watchful parts of the simple Ro-Way mechanism that keeps the sheave wheels in true alignment, and the Ro-Way Door from sticking and binding. Note the metal finishing process that keeps the hardware parts from rusting and corroding, and see the new feature that makes even the rarely needed spring adjustment a matter of quick convenience. Best of all . . . prices are not higher . . . you won't pay a penny more for all that Ro-Way gives.



18 Ro-Way Overhead Type Doors were installed in C. D. Kenny Warehouse, Baltimore, Md. Installation by Kirson Construction Company, Contractors.

Get These 5 Extra Values

Rō-Way gives them at no Extra Cost!

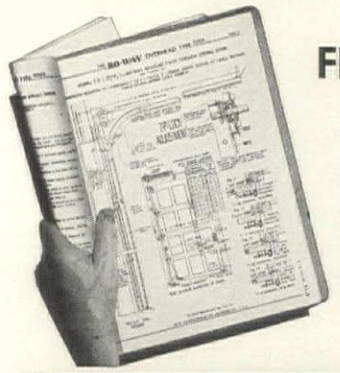
They are the pace-setting Ro-Way improvements designed to insure smoother operation and added years of service . . . "Crow's Foot" Outer Bearing Support . . . "Ro-To Live" Spring . . . "Zip-Lock" Adjustment . . . "Tailor Made" Springs . . . and Parkerized and Painted Hardware.

Authorized Ro-Way Overhead Type Door Representatives in all principal cities are at the service of any architect wishing further information about these improved Overhead Type Doors for Residence, Commercial or Industrial Installations. Write for 72-page "Time-saving Specification Book."



This distinctive duplex apartment building, owned by Morris Marks, Salt Lake City, Utah, is equipped with two Ro-Way Overhead Type Doors.

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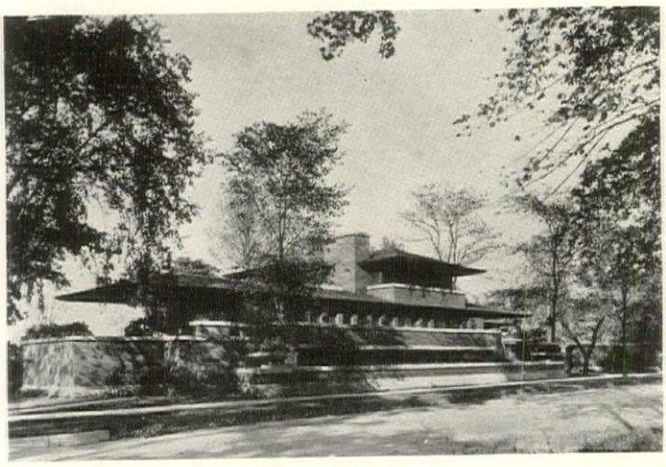
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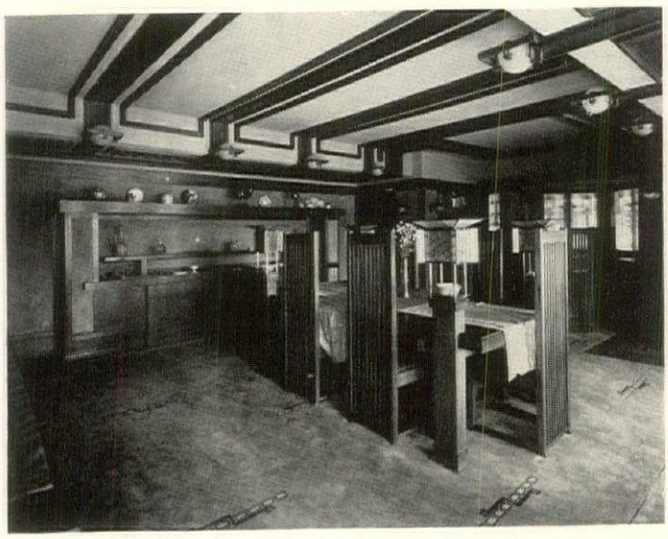
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There's a Ro-Way for every Door way!

BOOKS





As this book of Frank Lloyd Wright came off the press, word was received that the Robie house in Chicago, one of the greatest of his early houses, was in danger of demolition. Built in 1908, the house has been published in books and magazines all over the world, and has been visited by thousands of architects and students in the past 30 years. Its powerful horizontals, and the complete integration of walls, windows and roof form one of the finest expressions of Wright's characteristic approach. The house is now owned by the Chicago Theological Seminary, and occupies ground which is needed for expansion of the institution. Fortunately the Seminary is aware of the importance of the house, and is making every effort to work out plans for its preservation. It is to be hoped that the Seminary and the committee of architects which has been formed to collaborate with it will be successful. Its demolition would be an irreparable loss to the country.

FRANK LLOYD WRIGHT ON ARCHITECTURE. Selected Writings, 1894-1940. Edited by Frederick Gutheim. Duell, Sloan & Pearce, Inc. 275 pp., 9 x 9. $3.50.

"Everybody," says Frank Lloyd Wright, "writes something." His own contribution to "the ubiquitous art of this age" is neatly packaged in the characteristic square format, is adorned with the inevitable red square, and has been adroitly edited by Frederick Gutheim to form a comprehensive record of Wright's literary activity during nearly a half century. In this selection the most articulate of American architects appears as critic, prophet, polemicist, columnist (he wrote a weekly column for the Madison "Capital Times" for several years), and simply as an architect patiently explaining what he was trying to do. To anyone interested in Wright's architecture, the book is naturally an invaluable supplement to the buildings themselves. Over and above this it is a fascinating expression of an incisive and skeptical mind, with an extraordinary range of interests. It also displays a command of the language which few writers today have equaled. The material presented is endlessly quotable, for Wright like his other irrepressible contemporary, Shaw, is never at a loss for a neat phrase. Undoubtedly a substantial part of Wright's reputation as a personality derives from his habit of speaking his mind with devastating frankness, of saying the right thing at exactly the wrong moment. Most of the august bodies which at one time or another have invited him to speak have been rudely jolted by Wright's bland expressions of opinion concerning their significance in the general scheme of things, and there is no lack of such examples here. A speech on Chicago culture to a women's society in that city, for instance, ended with the somewhat less than flattering "Chicago has *everything* but culture." On certain of his contemporaries: "Le Corbusier, et al, are yet where I stood in 1900." Taken out of context such phrases sound malicious; actually they are not. Le Corbusier, apparently considered by Wright as his chief adversary, is frequently mentioned in a manner which indicates a feeling that even the devil should be given his due. There is plenty of acid in Wright's make-up, and plenty of strong language in his book, but there is no petty malice. He has never missed an opportunity to acknowledge his debt to Sullivan and Adler. Asked his opinion of Alvar Aalto, he gave it very simply: "Aalto is a genius." Of architects abroad he has written, "I think that in Europe are perhaps a dozen who are among the greatest architects and among the greatest men who have lived in our time." The bitterest criticism and the most generous appreciation both stem from a fighting honesty and devotion to an architectural ideal which might on occasion be mistaken but is never less than admirable.

Through the writings there run a number of themes which establish the fundamental outlines of Wright's philosophy; there is development of ideas since 1894, but no basic change. One of the most important of these themes deals with the machine. In the famous Hull House lecture of 1901, Wright said, "The machine is here to stay... There is no more important work before the architect than to use this normal tool of civilization to best advantage instead of prostituting it." In 1929: "Here is principle in all of my buildings, but subservient, servant, not master, is the machine." And in 1939: "Science can give us only the tools in the box, these mechanical miracles that it has already given us. But of what use are miraculous tools until we have mastered the humane cultural use of them?" Few of

(Continued on page 88)

Floors with the modern touch



This up-to-date kitchen in one of the new Long Island homes at New Hyde Park, Long Island, owes much of its attractive appearance to Goodyear Wingfoot Rubber Flooring. Builder: Samuel Harris.

TO be *truly* modern a kitchen should have an attractive floor that is quiet and comfortable to walk on and that is easy to keep clean.

That's why Goodyear Wingfoot Rubber Flooring is being installed in the kitchens of the 400 Long Island homes now being constructed at New Hyde Park, Long Island.

Dirt doesn't penetrate its smooth and glossy surface and neither match burns nor most acid stains can mar its good looks. Occasional washings keep it clean and sparkling.

It is tough and durable, and it lies flat without bulging or stretching—while its smart appearance effectively brightens up *any* room, whether in a private home or public building.

Architects can use the many patterns and color combinations provided by Wingfoot Rubber Flooring to make it harmonize with any decorative scheme. And it can be installed in either sheet or tile form.

THE GREATEST NAME IN RUBBER

GOODYEAR

Wingfoot Rubber Flooring

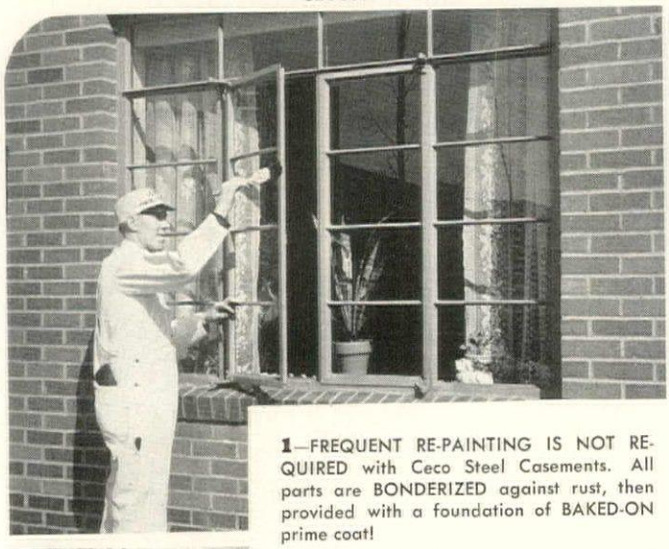
For complete specifications, see Sweet's catalog or write to Goodyear, Akron, Ohio—or Los Angeles, California.

Wingfoot—T.M. The Goodyear Tire & Rubber Company



You Bet They're Interested In LOW UPKEEP

SECOND of a series of advertisements on How to Design and Build Homes that Sell!





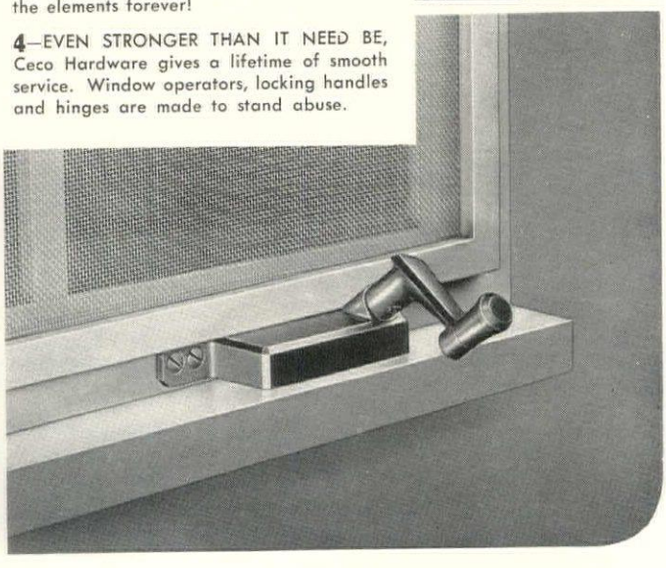
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2—GOOD FOR A LIFETIME, Ceco Metal Frame Screens do away with usual screen upkeep. Genuine bronze screen cloth resists the elements forever!

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● Please the home-owner with an eye for economy! With first costs equal to ordinary windows, and upkeep costs at a new low level, Ceco Steel Casements are a doubly shrewd investment. It costs no more to give home-owners the future protection that Ceco Casements provide. You will give them unobstructed ventilation, floods of healthful sunshine and modern beauty, too! For complete owner satisfaction, try a set of Ceco Casements in the next home you design or build!

CECO STEEL PRODUCTS CORPORATION

Manufacturing Division: 5701 W. 26th St., Chicago, Ill.



FREE!

This brochure is full of facts about Ceco Steel Windows. It shows actual, beautiful interior and exterior window treatments. It tells the story for you. Send for this FREE, helpful sales aid.

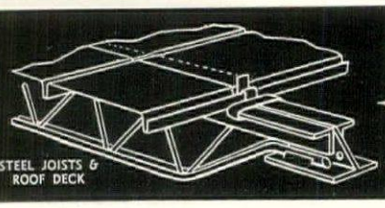
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This Hotpoint Electric Kitchen Is Worth A Hundred Sales Talks!



THIS clean, modern, streamlined kitchen moves right into a woman's heart. It excites her emotions on sight; delights her; moves her to a decision. *This is salesmanship.* It's stronger than the glibest sales talks because the merchandise itself makes the buyer want it.

Hotpoint Electric Kitchens keep owners happy through the years. They fit the modern family's scheme of living; more efficiency, more cleanliness, better living with less work.

A kitchen of any size or shape can be modernized to make as efficient a dream kitchen as the one illustrated above with Hotpoint appliances and Hotpoint Steel Kitchen cabinets. Sell prospects easier—use Hotpoint Electric Kitchens.

Hotpoint

Refrigerators • Ranges • Water Heaters • Washers and Ironers • Clothes Dryers • Automatic Dishwashers • Electrasink • Steel Kitchen Cabinets

Leading architects, builders and realtors say that an Electric Kitchen is the shortest route to a woman's heart —the logical way to get a better price.

There is a Hotpoint Electric Kitchen to fit every size and type of home. Easily and inexpensively installed. Hotpoint engineers will gladly cooperate with architects, contractors and builders in design and plans.

Edison General Electric Appliance Co., Inc., 5651 West Taylor Street, Chicago, Illinois.



Over A Million women have bought Hotpoint Electric Ranges —a testimony to Measured Heat, Cleanliness and Safety.



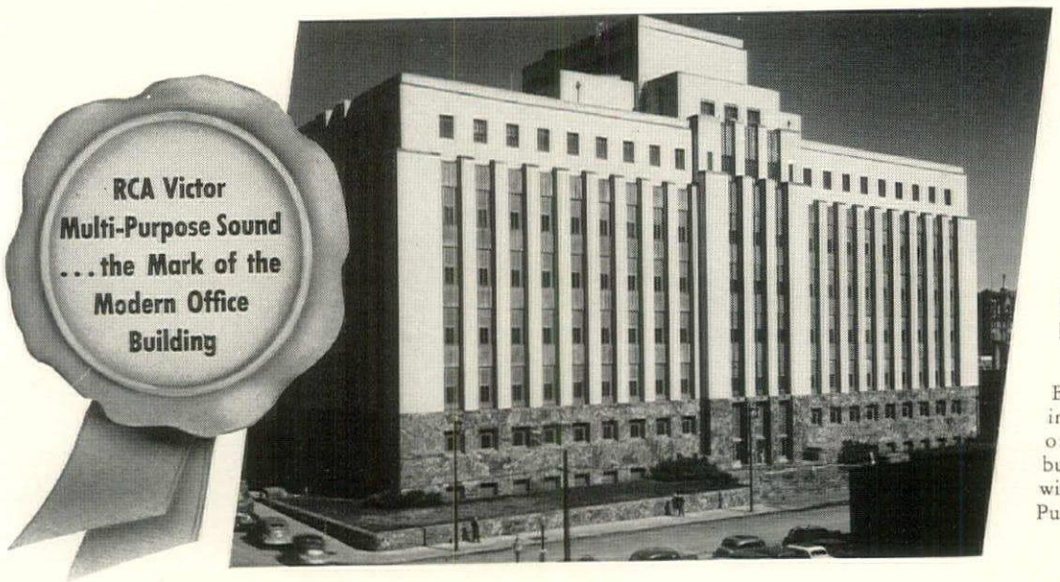
Hotpoint Refrigerator brings these advanced electric refrigeration features: 7 Food Storage Zones, Butter Conditioner, scores of others.



Automatic Hotpoint Electrasink banishes dishpan and garbage pail; disposes of food waste, washes dishes automatically.



Hotpoint Water Heater provides 24 hour hot water service for a few pennies a day. Clean, safe, flameless, automatic.



The RCA Victor Sound Service for office buildings includes:

Radio
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Banker's Life Building in Des Moines, Iowa, is one of many modern buildings in the U. S. with RCA Victor Multi-Purpose Sound.

The Magic of RCA Victor Multi-Purpose Sound will help you

DESIGN FOR EFFICIENCY

In offices, hotels, hospitals and countless other public buildings, efficiency is all important! Provide for it with this Sound Service that

Saves Steps! Saves Time! Saves Money!

IN THESE DAYS, when minutes mean money, RCA Victor *Sound* Service is just as indispensable to the modern office building as the services of light, heat and water. For *this* service saves steps, time and money—greatly increases efficiency. And when you *design for efficiency*, you're talking your client's language.

RCA Victor Multi-Purpose Sound converts wasted walking and waiting time into profitable working time by providing instant communication with one or many people in the building. Group meetings may be addressed, individual instructions or messages conveyed, and routine matters handled quickly and efficiently. It makes possible paging and locating individuals without delay.

In addition, RCA Victor Multi-Purpose Sound is unmatched for emergency announcements. And it receives market reports, spot broadcasts, news and other radio programs. Also may be used to make commercial recordings and for the playing of recorded music.

Despite its many important services, RCA Victor Multi-Purpose Sound is surprisingly low in cost, and is available for any number of loudspeaker outlets. Full information on request. If you wish, a specially trained RCA Victor Sound engineer will discuss any sound coverage problem with you.

Trademark "RCA Victor" Reg. U. S. Pat. Off. by RCA Manufacturing Company, Inc.



(Above) Inter-office communication is fast and easy with RCA Victor Sound Service.



(Right) Groups may be addressed or instructed from remote point — without requiring them to leave their desks.

RCA VICTOR PREFERRED TYPE RADIO TUBES
For Finer Radio Performance

IT PAYS TO SPECIFY

RCA Victor

MULTI-PURPOSE SOUND

RCA MANUFACTURING CO., INC., Camden, New Jersey

A Service of the Radio Corporation of America • In Canada: RCA Victor Co., Ltd., Montreal

How you can
..fit Fluorescent lighting to the job
..keep your clients pleased
..and protect yourself!

• Here's a simple formula that always works: *Specify Certified★ Fleur-O-Liers* (fixtures for fluorescent lighting at its best). Because in Fleur-O-Liers you have a surprisingly wide choice of Certified units... over 100 styles and varieties at a wide range of prices... to help you suit the most exacting client and fit even the most difficult job. And when you specify fixtures bearing this label you can rest easier because you *know* you have definite assurance on important points such as:

1. **Top notch lighting performance** and maximum lighting efficiency.
2. **Dependable ballasts and starters**... certified to give *balanced,* economical, satisfactory operation.
3. **Durability and safety** . . . Underwriters' approved material . . . suspensions that can hold 5 times fixture weight . . . finishes that will not chip, peel or damage easily.
4. **Minimum flicker** and comfortable brightness to protect eyes from strain.
5. **Ease of maintenance.** Fleur-O-Liers must be easy to clean, easy to relamp; with all important parts readily accessible.
6. **High power factor** . . . 85% or more. This helps assure efficient utilization of the wiring system.

and many other points to make up a total of 50 essential safeguards *... checked and certified by impartial Electrical Testing Laboratories.*



Specify Certified★ Fleur-O-Lier Fixtures
for good lighting and good service

Send for this new booklet
It tells you why Certified Fleur-O-Liers are the key to the best in fluorescent.



FLEUR-O-LIER *Manufacturers*

Participation in the FLEUR-O-LIER MANUFACTURERS' program is open to any manufacturer who complies with FLEUR-O-LIER requirements

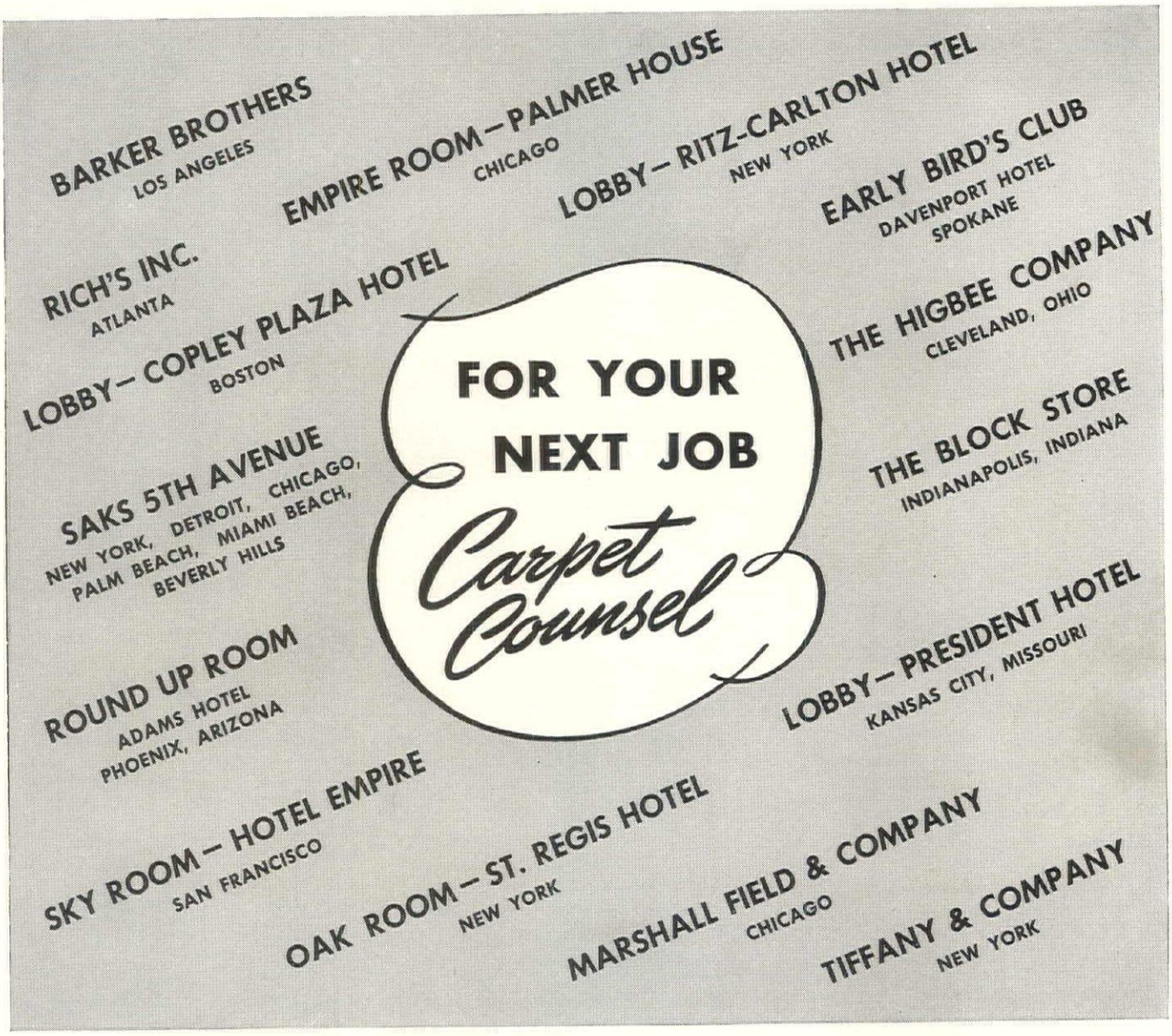
TEAR OUT AND MAIL
FLEUR-O-LIER MANUFACTURERS
2119-B Keith Building, Cleveland, Ohio

Please send me the new booklet, "50 Standards for Satisfaction," the behind-the-scenes story of Certified Fleur-O-Lier fixtures for fluorescent lighting at its best.

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Address _____

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Architects...

specify Bigelow Carpet for jobs like these and ask for Carpet Counsel service—

Hundreds of hotels, stores, specialty shops, as well as ships, trains and luxury planes, are Bigelow-Carpeted through Bigelow's Carpet Counsel because architects say it is the most economical and trustworthy carpet service they have found in years of experience. Bigelow-Sanford Carpet Co., Inc., 140 Madison Ave., New York, N. Y.

RUGS & CARPETS BY BIGELOW WEAVERS MADE IN U.S.A.

CARPET COUNSEL BY...
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Each EXTRA INCH is another extra reason...

...for specifying roofing of FLINTKOTE TAPERED STRIPS

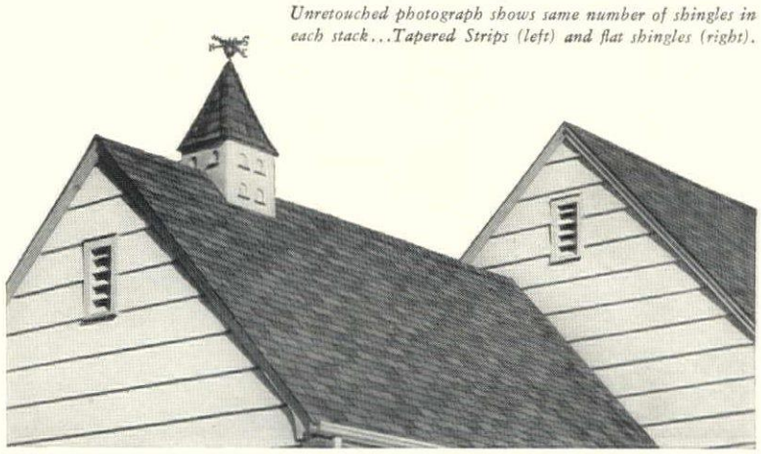


Unretouched photograph shows same number of shingles in each stack...Tapered Strips (left) and flat shingles (right).

This actual photograph illustrates those *extra* thick tapered coatings of protective asphalt on every Flintkote Tapered Strip shingle. Added thickness on weather ends—25% to 33% more—insures a longer-lasting roof. A special heavy coating on the underside makes these modern shingles self-sealing, prevents damage from wind or driving rain.

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Architects heartily approve the deep shadows cast by these thicker shingle butts. Here, at moderate cost, is the texture and rugged character of expensive roofings. Many colors and blends are available to carry out your decorative plans. These 12" x 36" strips hold down labor costs and speed application. Laid with 5" exposure, three bundles cover a square. Fire-resistance of this popular mineral-surfaced Flintkote shingle is proved by their Class C Underwriters' Label.



Have you received copies of the *latest* catalogs on Flintkote asbestos and asphalt roofings and sidings? Please send for facts about the new structural and decorative insulating board products... and detailed information about Flintkote waterproofings, protective coatings and other specialties for residential and industrial buildings.

The FLINTKOTE Company

30 ROCKEFELLER PLAZA, NEW YORK

ATLANTA... BOSTON... CHICAGO HEIGHTS... DETROIT... LOS ANGELES... NEW ORLEANS... WACO... LONDON

LETTERS

BUILDING FOR DEFENSE

Forum:

I have read with great interest your editor's letters on defense housing. Congratulations! You are rendering a service not only to the architects but to the country at large. As a matter of fact we, as architects are probably much at fault. The more gifted in design are not necessarily so in speech. We are not articulate enough. Our fellow citizens and, therefore, our congressmen, our lawmakers, are not sufficiently acquainted with the types of services which architects are trained to render.

To see the architects of the United States left, in times like these, almost entirely outside of a huge construction program is tragic—not just because these *men* may suffer but because our *Nation* may suffer. You can laugh off, if you want, the harm done to 500 individuals, but you can't laugh off the harm which may come to 130 millions as a result of having neglected to make use of the services of these 500 individuals who happen to be the best trained men we have to render such services.

It is becoming increasingly clear that organizations of experts are winning this war. Architects are experts in the fields of planning, design and construction, and yet most of the construction work required by our National Defense is being done without architects.

Most people acknowledge that guns must be manufactured *before* they can be fired. All the ads inform us that "Guns must be ready to thunder along our coasts. Tanks must be ready to roll across the countryside. But long before this comes the BATTLE OF PRODUCTION."

Yet how many people know that Planning and Design must come *before* the BATTLE OF CONSTRUCTION. It's elementary. Everyone should know that. And should also know that the men who can do Planning and Design are the men called architects, the men who for the last fifteen, twenty or thirty years of their lives have done nothing else but Planning and Design.

Did you hear this story?

A Major General was explaining to an architect that the layout of an army camp from time immemorial was like this and this, and certainly they didn't need an architect and there wasn't anything an architect could suggest which would be of any value. The architect said why not arrange these buildings here like this and if that could be done wouldn't the camp be better? The Major General admitted he hadn't thought of it, why hadn't anybody told him before, yes of course it could be done and yes the camp would be better if it were done. Result: at probably less cost, with as much speed as the standard, a much better camp.

Did you hear this one?

A government agency authorized to build houses on a thousand acre tract prepared a site plan for it where all the roads were parallel and all the houses on each side flanking the roads, monotonous rows and rows of them, three or four thousand feet long. It was terrific. On beautiful land, it promised to become the slum of 1942. Then someone had the courage to say, "Let me show it first to an architect. I'm seeing him tonight; I'll ask him informally what he thinks." (Note: the architect enters through the back door, as the poor relation).

The architect went to work. He suggested arranging the houses in varying groups around smaller roads branching off the main one. Result: an interesting site plan, with changing vistas, built for human beings and not robots. Result: for probably less money. Designed and built as fast as the first one. To last much longer than the first one would have.

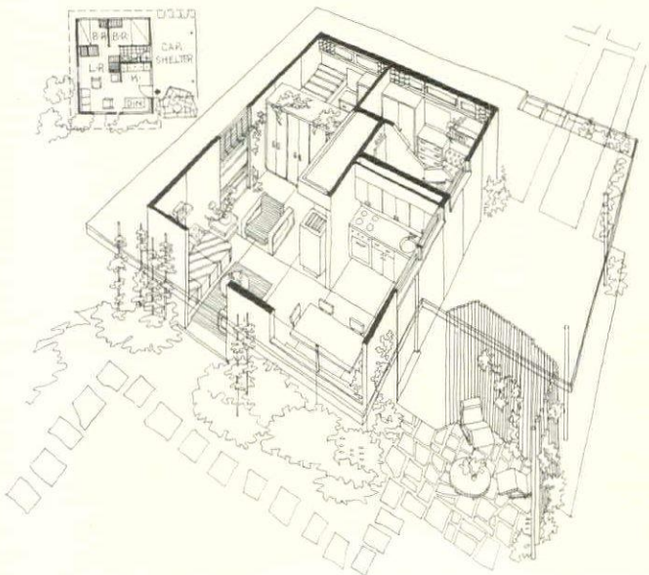
Your suggestions and criticisms are eminently constructive and patriotic. How are we to find the best if we don't knock our heads together first? Alas, we should have done so last June. Even earlier. It's later than we think. Do we mean what we say when we say we want to preserve our democratic form of government? If we do mean it then let's put everybody to work at that part of our defense program he is best trained to do. Let everyone do his and her share. We simply can't afford to let 500 experts remain idle. At the present moment a great number of architects, aged plus or minus forty, are made to feel that their usefulness to their country is infinitely smaller than that of an eighteen year old apprentice in a flying school. That doesn't make sense. It's sheer waste today and it may become criminal folly tomorrow.

It's incredible (or simply naive) but I believe that there is still time. Is there? Then the big question: what should we do? I'll tell you what you must do: keep up the good fight. Explain to Washington, to Albany, to Harrisburg, to Hartford, to Trenton, to Annapolis, to all the capitals of our States, to all our cities, what their architects can do. Shout it from the roof tops. Tell our Government agencies that the architects are not the longhaired fellows that they are supposed to have been, tell them that they are able, practical, sensible men, eager to be of service.

Do you remember the weeks of anxiety after the fall of France when we really woke up to the realization that we had better get ourselves prepared? Every one of us was eager to do his share, to do as best he knew how what he had been trained to do. No thought of profit, but a great hope of being useful. What's happened to all that? Weeks and months have gone by. Almost a year. I sincerely hope that we have been getting ourselves prepared. Somehow I can't help feeling—as so many do—that we have not done things as well as we could have if we had only planned them *first*. When shall we learn?

WILLIAM LESCAZE

New York City



$2,000 HOUSE

Forum:

After reading your correspondence as published in THE FORUM with the Messrs. Carmody and Palmer, I have sent to the above named working drawings, specifications, and the same perspective as enclosed as a possible solution to the $2,000 to $3,000 Defense house. Possibly nothing will come of it, but the building nevertheless represents a completely equipped unit, including all built-in furniture at a cost of $3,000 or less in the Chicago area.

WILLIAM A. GANSTER

Waukegan, Ill.

now you can have

...more and better light quickly!
...without expensive wiring changes!
...and with no "slow-up" of production!



• • • with IVANHOE "50 FOOT CANDLER" RLM *Continuous Wireway* FLUORESCENT LIGHTING SYSTEM

● Are you in a position where you know you can get faster production with better lighting . . . but you're afraid it will cost you too much time and money to get it?

IVANHOE "50 FOOT CANDLER" can lick that problem for you as it has for many other manufacturers under production pressure. Its *continuous wireway* (wiring channels contain all wiring and operating auxiliaries) insures speedy, economical installation . . . eliminates up to 80% of plant wiring conduit.

Because IVANHOE "50 FOOT CANDLER" is *not* a lighting fixture but a *lighting system*, it permits you to get light for some production without waiting for the entire installation to be completed. If you're working against time and want to cut production costs, this new and *better* lighting system can make time do "double-duty" for you. Write for new "50 FOOT CANDLER" Bulletin 1C . . . **now.**



In this typical weave room, Ivanhoe "50 Foot Candlers" provide 50 foot candles of illumination and speed the production of defense materials.

IVANHOE

THE MARK OF A COMPLETE LIGHTING SERVICE

THE MILLER COMPANY
MERIDEN, CONN.
Pioneers in Good Lighting Since 1844

ARCHITECTS AND ENGINEERS ARE TOO BUSY TO BE LIGHTING SALESMEN!

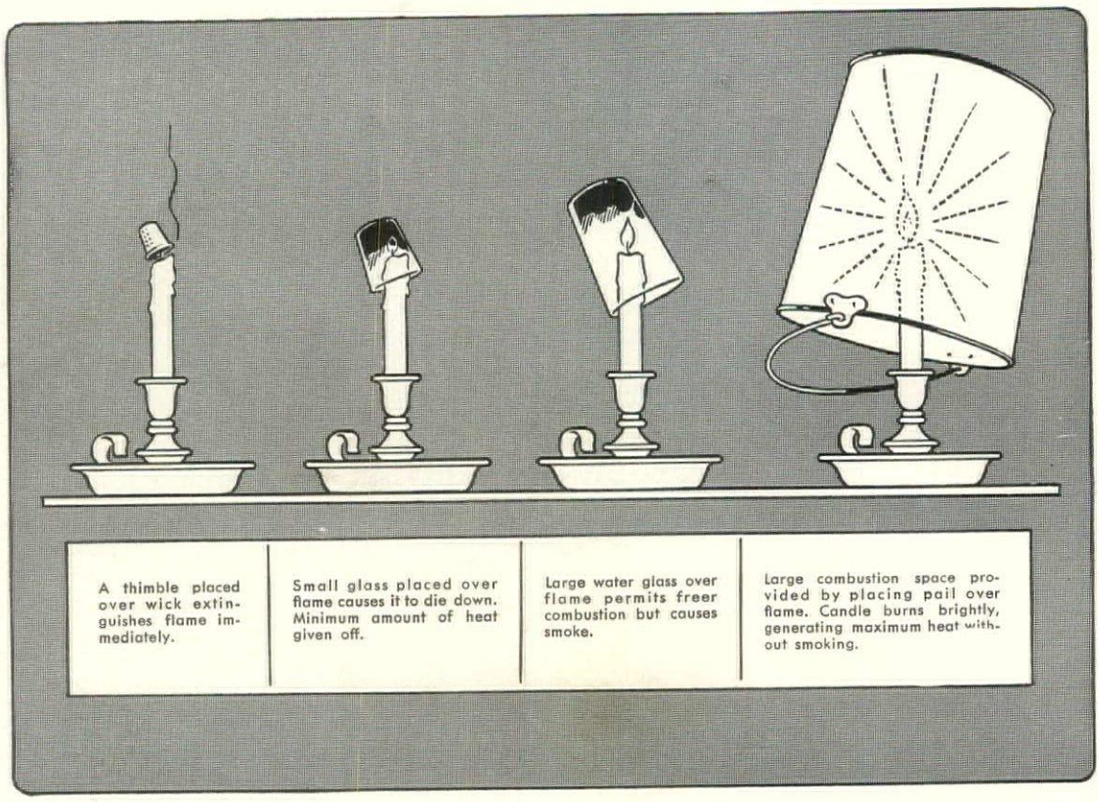
YOU simply haven't the time today to *sell* your clients on any type or make of lighting, regardless of its merits. That is why The Miller Company, *first in the field* with RLM Continuous Wireway Fluorescent Lighting—the IVANHOE "50 FOOT CANDLER"—has been telling your clients everywhere about this highly efficient lighting system. The advertisement at the left, for example, "talked" to some 117,000 top executives in business and industry in May 24th BUSINESS WEEK. Similar advertisements in page size are reaching plant management men across all industry, the textile field, institutions, the utilities and electrical trade. All in all, more than 500,000 individuals important to you.

When your lighting specifications call for IVANHOE "50 FOOT CANDLERS" you have the assurance you are recommending a *lighting system* whose advantages and economies are known quantities to your clients. You have no selling to do.



MAKE the Miller booth your headquarters when the FLUORESCENT FUTURAMA, now on tour of 16 leading cities, reaches your community.

The Candle Test Proves a Pacific Boiler Advantage



THE PRINCIPLES of combustion that apply to a candle flame also govern the burning of fuel in heating boilers. Whether it be gas, oil or coal, mechanically or hand fired, the combustion chamber of the boiler must be correctly proportioned to eliminate wasted fuel.

That's why you will find the combustion chamber of every Pacific boiler scientifically designed not only for the size of the boiler but for the type of fuel to be used as well.

Compare the size of Pacific combustion chambers with competitive makes — you will find them generally larger and better proportioned — items that pay big dividends in fuel savings and operating satisfaction.

Add to Pacific's combustion chamber its positive forced circulation, an exclusive Pacific point of superiority—its ease of cleaning—its rugged welded construction, and you have some of the reasons Pacific boilers have been giving unusual satisfaction in the heating of buildings since 1912.

There is a Pacific boiler of the right size and type for your next building, which will give you the maximum in fuel economy with a minimum of maintenance cost. Write for literature to Pacific Steel Boiler Division of United States Radiator Corporation, Detroit, Michigan.

TRADE MARK REG. U.S. PAT. OFF. STEEL HEATING BOILERS PACIFIC WAUKEGAN ILLINOIS

PACIFIC

STEEL HEATING BOILERS

DIVISION OF UNITED STATES RADIATOR CORPORATION, DETROIT, MICH.



Sure — I've heard about BRUCE STREAMLINE FLOORING — but "I'm from Missouri"!



ARCHITECT: Streamline Flooring sounds good all right. But "I'm from Missouri" . . . you've got to show me how it's to my client's advantage for me to specify it.

SALESMAN: OK! There's a job going in near here today. Come along with me and I will show you.



ARCHITECT: Nice lot of houses they're building here.

SALESMAN: Yes, they've already sold 42 of them. And Streamline Flooring was used in every one. They say it's one of the biggest selling points.



SALESMAN: How're you coming with the floor?

FLOOR LAYER: Swell! We just started laying it this morning, and we'll be out of here tonight. With no sanding or finishing to do we can really turn out the jobs in a hurry.



ARCHITECT: Good looking finish on that flooring.

FLOOR LAYER: Sure is, and it really stands wear and tear. That penetrating finish they put on Streamline at the factory doesn't scratch or chip like ordinary surface finishes.



ARCHITECT: Sounds good. But do owners like Streamline? **SALESMAN:** They all praise its modern, distinctive appearance. And in a recent survey 94% of the people said their Streamline Floors are easier to keep clean than any floors they've ever had.



ARCHITECT: Yes, but what about the cost of this Streamline? I have to keep the cost down on most of the houses I'm planning these days.

SALESMAN: Streamline costs no more, maybe less, than the floors you're specifying now. Here's a chart that'll show you just how to compare costs.



ARCHITECT: You're right! My clients can have Streamline for the same cost as regular floors, and I'm through with the uncertainty of having floors sanded and finished on the job.



Quick Facts About BRUCE STREAMLINE FLOORING

- Bruce Streamline Flooring is available in Oak, Maple, and Beech. Three sizes: 25/32″x3¼″, ½″x2½″ and ⅜″x2″. Laid like ordinary strip flooring. Nationally advertised. Mail coupon *today* for complete information and free "scratch test" panel.

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● GROUP A . . . BY-PASSES EXTERNAL TO CONDITIONER . . . Physical By-pass

1. Standard By-pass — U. S. Patents Reissue 16611; Reissue 20088
2. Fresh and Mixed Air By-pass — U. S. Patent 1977315
3. Mixed Air By-pass — U. S. Patent 1895444
4. Fixed By-pass — Variable Conditioning — U. S. Patent Reissue 20944
5. Remote By-pass — Local Recirculation — U. S. Patent 1983023

● GROUP B . . . BY-PASSES INTERNAL TO CONDITIONER . . . By-pass Effect

SPRAYS

1. Sprays Across Washer — Coil Across Lower Half — U. S. Patent 2110203
2. Wet Coils to Control Constant Differential Between Washer Ends — U. S. Patent 2110164
3. Stratified Dehumidification — U. S. Patent 1955406
4. Controlled Spray Dehumidification — U. S. Patent 1846875
5. Spray Washer with Coils to Produce Comfortable Air — U. S. Patent 2123742

WATER, BRINE OR DIRECT EXPANSION COILS

6. Coils Across Conditioner Variably Controlled — U. S. Patents 2009529; 2202946
7. Coils in Series with Air Flow — Variably Controlled — U. S. Patent Reissue 20069
8. Single Coil Across Conditioner — Refrigerant Controlled — U. S. Patent 1956707
9. Damper Coils to Produce Variable Conditioning — U. S. Patents 2105692; 2150505

● GROUP C . . . DIFFERENTIAL CONTROLS

1. Designed for Economical Refrigeration — U. S. Patent 1840565
2. Designed for Maximum Use of Outside Air — U. S. Patent 1751805
3. Maximum and Minimum Inside Based on Outside Air — U. S. Patent 1751806

● GROUP D . . . DEHYDRATION*

1. With Cooling of Outside Air and Drying of Mixed Air — U. S. Patent 1863579
2. With Separate Treatment of Outside and Mixed Air — U. S. Patent 1863578
3. With Separate Treatment of Outside and Return Air — U. S. Patent 1863577
4. With City and Chilled Water Cooling — U. S. Patent 1863576
5. For Summer Cooling with Return Air By-pass — U. S. Patents Reissue 17998; 2213350
6. For Year Round Use — U. S. Patent Reissue 18831

**DEHYDRATOR may be Silica-Gel, Lithium Chloride or similar substances.*

● GROUP E . . . MISCELLANEOUS

1. Discharge of Conditioned Air Enveloped by Return Air — U. S. Patent 2131725
2. Horizontal Discharge of Conditioned Air Supported by Layer of Room Air — U. S. Patent 2112685
3. Lobby and Waiting Room System — U. S. Patent 1817384
4. Two Stage Conditioner — U. S. Patent 1718815
5. Air Diffuser for Auditorium — U. S. Patent 1737661
6. Reheat with Condenser Cooling Water — U. S. Patent 1902563

OTHER PATENTS PENDING

● **The above grouping and titles are for convenient reference and not to define or limit the scope or coverage of the patents referred to.**

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The Haines Company, Chicago, Ill.
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The Story of Two Firemen...



TOM and Joe entered the fire department together.

Tom figured that just being a fireman was slow going. Why not peddle fire insurance, too? When the boss heard about it Tom got fired.

Joe, on the other hand, learned all the old ways to fight fire, and he figured out some new ways. And now, he's Chief!

THE MORAL is that it pays to specialize. And National Gypsum is an excellent example.

In fifteen years, National has become the largest exclusive wall and ceiling products manufacturer in the world. And look at what's happened:

Most gypsum wallboard today is lightweight, strong and easy-to-handle. That wasn't so before National research developed a patented process to make a strong light-weight board. Today Gold Bond continues to lead the field to the benefit of the dealer and carpenter.

Plaster used to be hit-or-miss quality. National searched out the purest gypsum deposits, delivers you a plaster today that is richer, easier working and tailored to meet job conditions. 319 specialized Gold Bond representatives show the man on the job how to get better results! National research developed the exclusive patented "Gold Bond Floating Wall" system which minimizes plaster cracks and reduces sound transmission. It developed the Gold Bond metal arch bead that cuts and bends on the job to form perfect low-cost arches. These are but a few examples. The advantages National Gypsum offers you are obvious.

First, in using Gold Bond products you get the best things first. You profit automatically from every product improvement that a large and busy laboratory organization produces. You have exclusive features available from no other manufacturer.

Second, you have the assurance of undivided responsibility on the complete job. You can specify a Gold Bond product for every wall and ceiling requirement: Gypsum plaster, wallboard, lath, finish lime, metal lath, insulation, casein paint, and sound control material. And when the whole job is Gold Bond, National's 15 years' reputation is behind it.

Write today for the 1941 Gold Bond Handbook describing new methods of wall and ceiling construction. Address National Gypsum Company, Buffalo, N. Y.

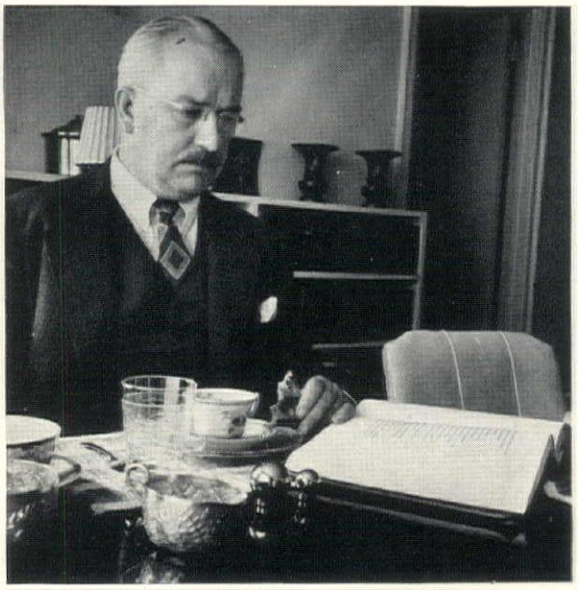
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Producing Units at:

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THE ARCHITECTURAL FORUM JUNE 1941

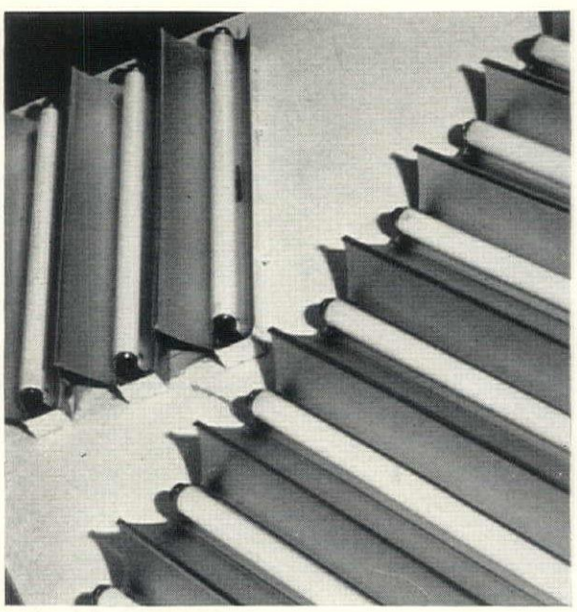


MAN OF THE MONTH . . . Dymaxion, demountable and Defense (page 425)

Ezra Stoller



BUILDING OF THE MONTH . . . Citizens gawk; occupants cheer (page 394)



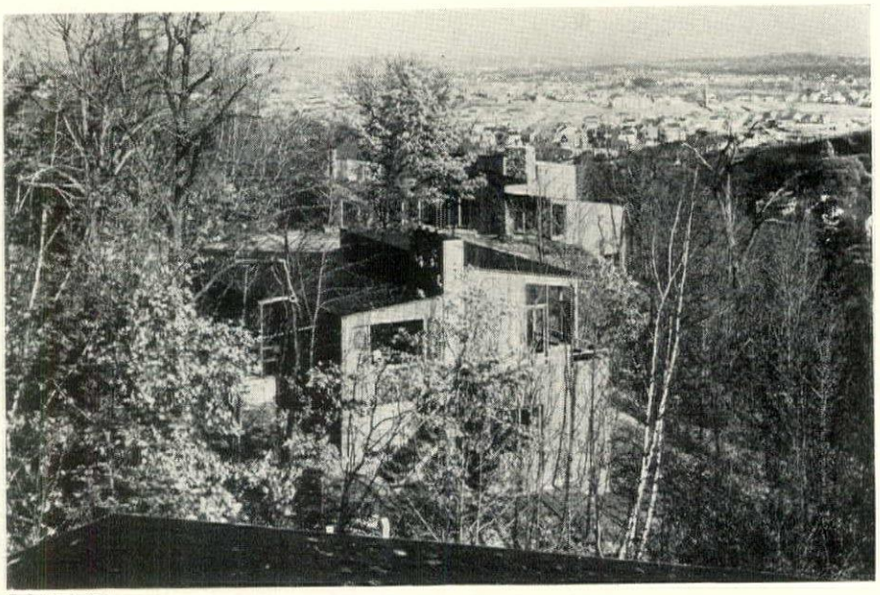
PRODUCT OF THE MONTH . . . Strip-tease lighting stops the show (page 405)

FIVE HOUSES IN BELMONT, MASS. CARL KOCH, ARCHITECT

Boston is not exactly the most favorable spot in the world for modern architecture, for the Colonial tradition has deep roots and the inhabitants still display a conspicuous degree of pride in their conservatism. Curiously enough however, it is in the Boston area that two of the most interesting modern house groups are to be found: the residences by Gropius and Breuer, and Walter Bogner, at Lincoln, and now Carl Koch's five-house development at Belmont. The background of this project is described by its architect:

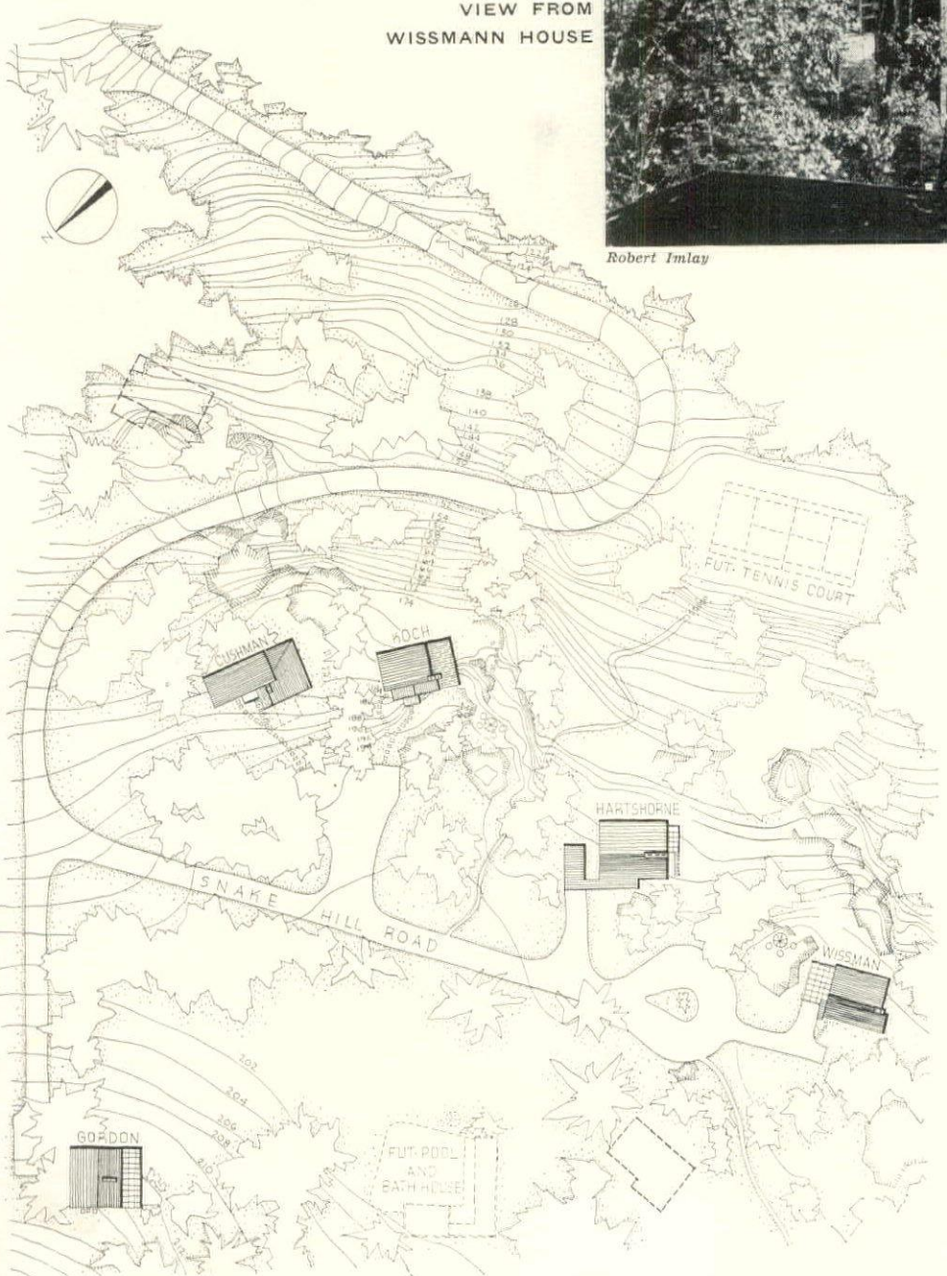
"Finding land was the first problem. Real estate people were not interested and developed land was prohibitive. The site selected has a magnificent view of Boston, is within a quarter of a mile of transportation and stores, and was for sale cheap because its rocky ledges were not believed suitable for conventional houses.

"The rarefied Boston atmosphere acts in a wondrous way to produce people unusually open to 'damn fool' ideas as well as those at the other extreme. We found four couples who were willing to be classified in the first group, and to buy, develop and build cooperatively. House plots are owned individually and a trust composed of the owners controls the common land and road.



VIEW FROM WISSMANN HOUSE

Robert Imlay

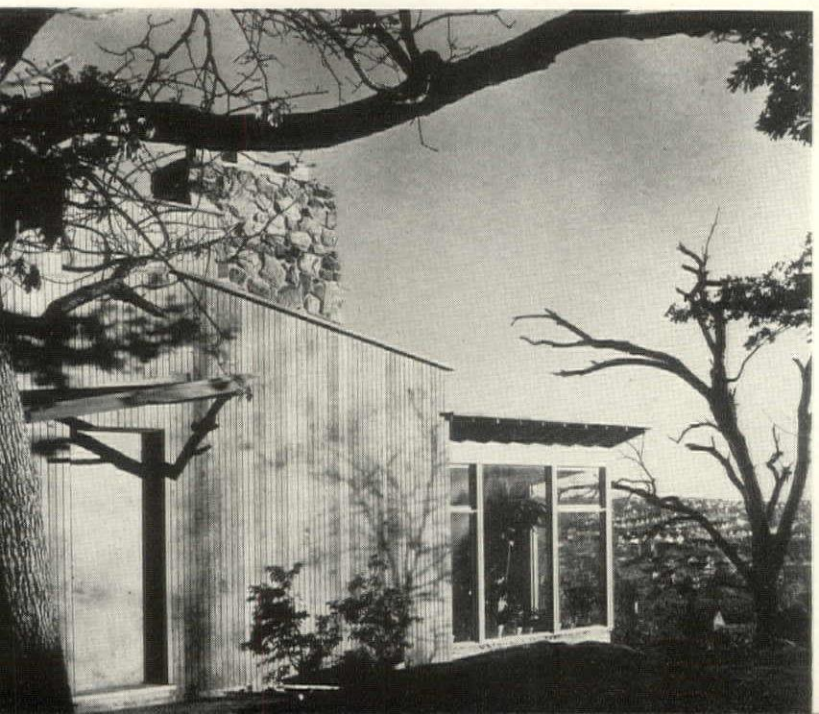


"We had some difficulty in persuading the town that our project would not be a liability. Getting water was a Herculean task, since three property owners claimed land through which the water trench had to run, and it was by the grace of God that the one who took pity on us was the one with a valid claim. It took five months of ironing out such difficulties before I took pencil to paper.

"The main factors determining design were the need for extreme economy and flexibility, a view of Boston to the southeast, and a rocky wooded site. Semi-prefabrication and identical plans were not feasible, and savings that were made came from standardizing on details and equipment. About 8 per cent was saved by building the five houses at once in this manner.

"Financing presented a tough problem, and ruled out one or two of the families. FHA was not interested, and we finally obtained 4½ per cent, 20-year mortgages on 65 per cent of the cost. Our explanation of the difficulties is that to many financial institutions the modern house is like an invention that must be suppressed because it would render valueless existing investments."

All photos, Ezra Stoller



KOCH HOUSE

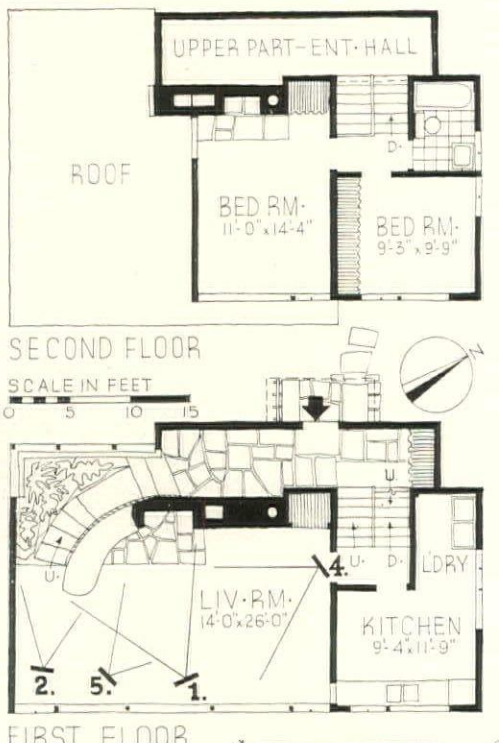
The architect's own house is arranged on three main levels, the lowest of which is built into a ledge of stone. On both the office and living room floors the rock has been left exposed. The device is extraordinarily effective in creating interest, especially in the office, where an entire wall of rock and a fireplace of the same material form a most sympathetic background. The treatment, as seen from both inside and out, is illustrated by the four photographs on the following page.



VIEW 1.

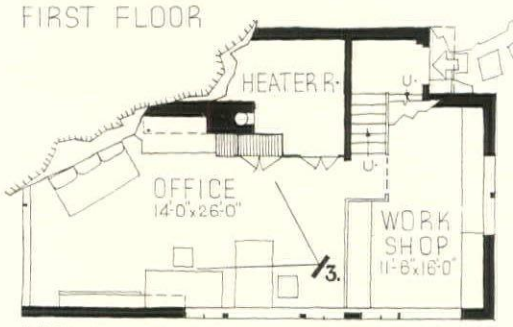


VIEW 2.



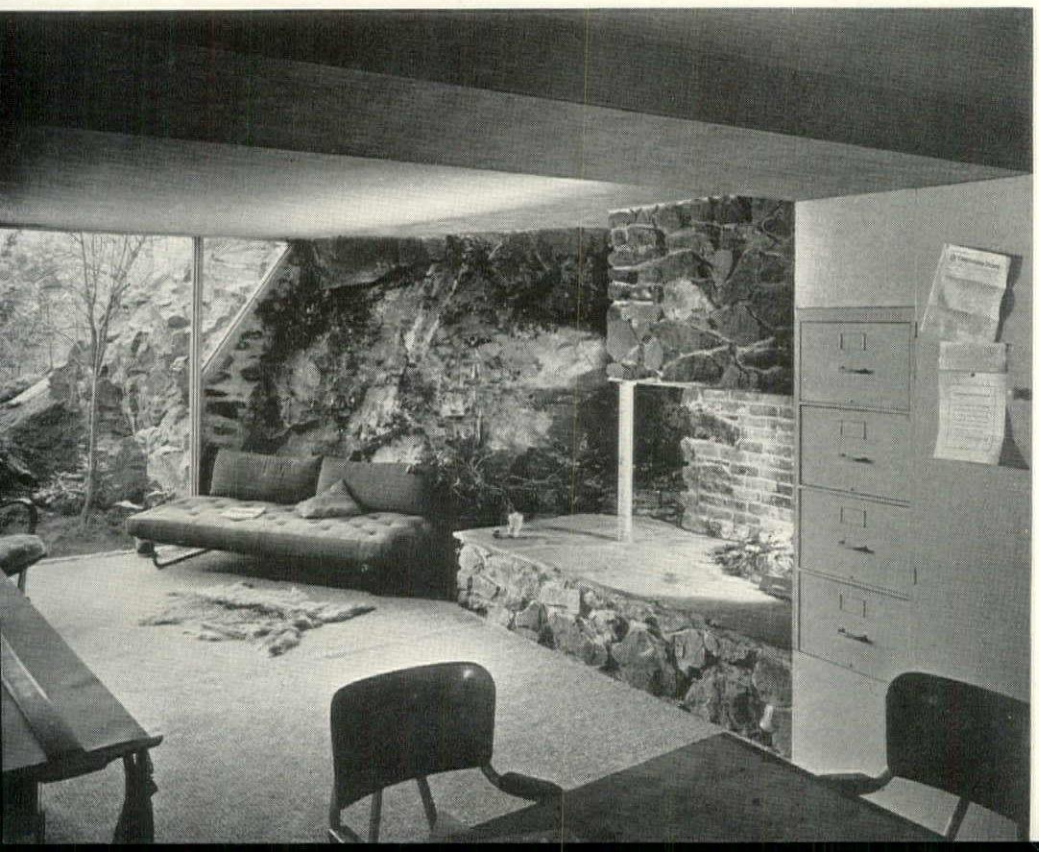
SECOND FLOOR

FIRST FLOOR



GROUND FLOOR

VIEW 3.





VIEW 4.

All photos, Ezra Stoller

VIEW 5.



KOCH HOUSE

CARL KOCH, ARCHITECT

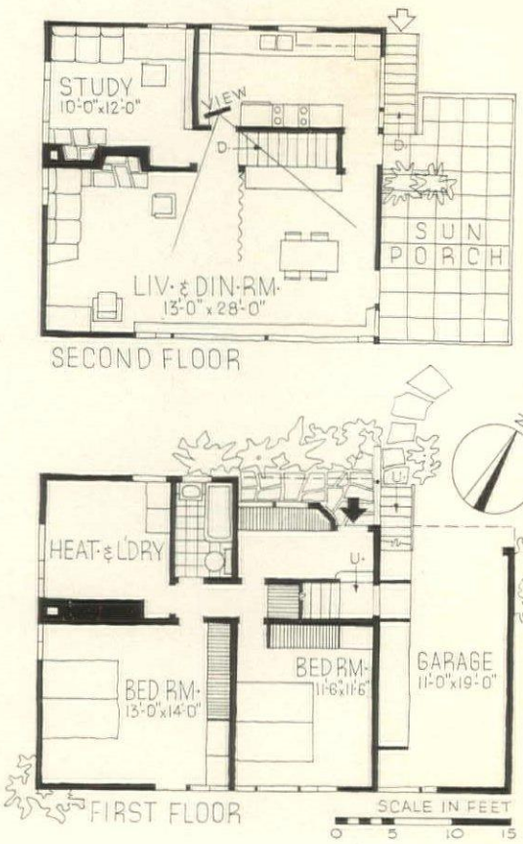
The interiors have been reduced to the simplest of details and materials, but without any sacrifice of warmth or comfort; much of the furniture, including the sofas and upholstered plywood chairs, were designed by the architect. An exceedingly compact plan was probably a major factor in producing the low cubic foot cost figure, and the elimination of millwork also contributed. If expansion of the living space is ever required, the office and workshop will be converted into two or three small bedrooms and a bath, and a new office wing will be constructed at the entrance level, on the northwest side of the house. Cost: $6,160. Cubage: 19,700, at 31 cents per cubic foot.

WISSMANN HOUSE





All photos, Ezra Stoller

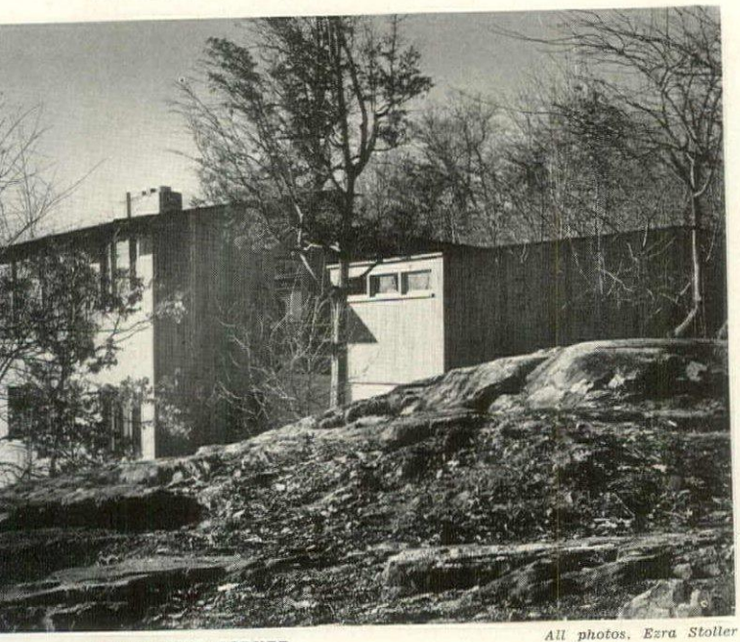




The owners of this house brought with them a number of requirements, based on experience gained and habits acquired during their years of apartment living, including a compact plan, a small apartment-type kitchen and comparatively small bedroom window area. The living and dining room was located upstairs to take advantage of the view, with a study, kitchen and sun porch also placed at this level. There is no basement, a heater and laundry room occupying a corner of the first floor. The photograph on the opposite page provides a good illustration of the general character of the site and the relation of the house to it. Cost: $7,570. Cubage: 18,600 at 40½ cents per cubic foot.

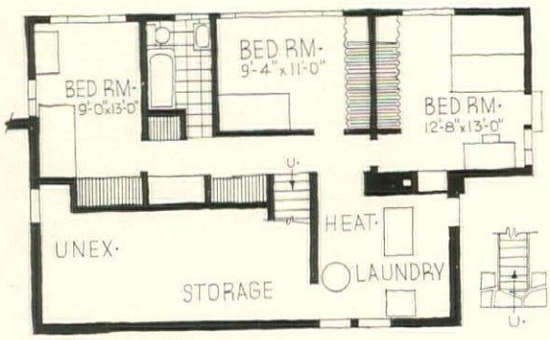
HARTSHORNE HOUSE

CARL KOCH, ARCHITECT

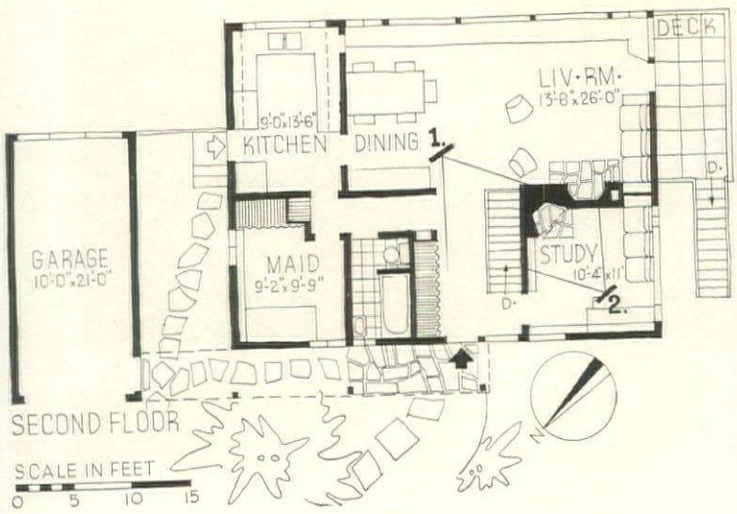


NORTHEAST CORNER

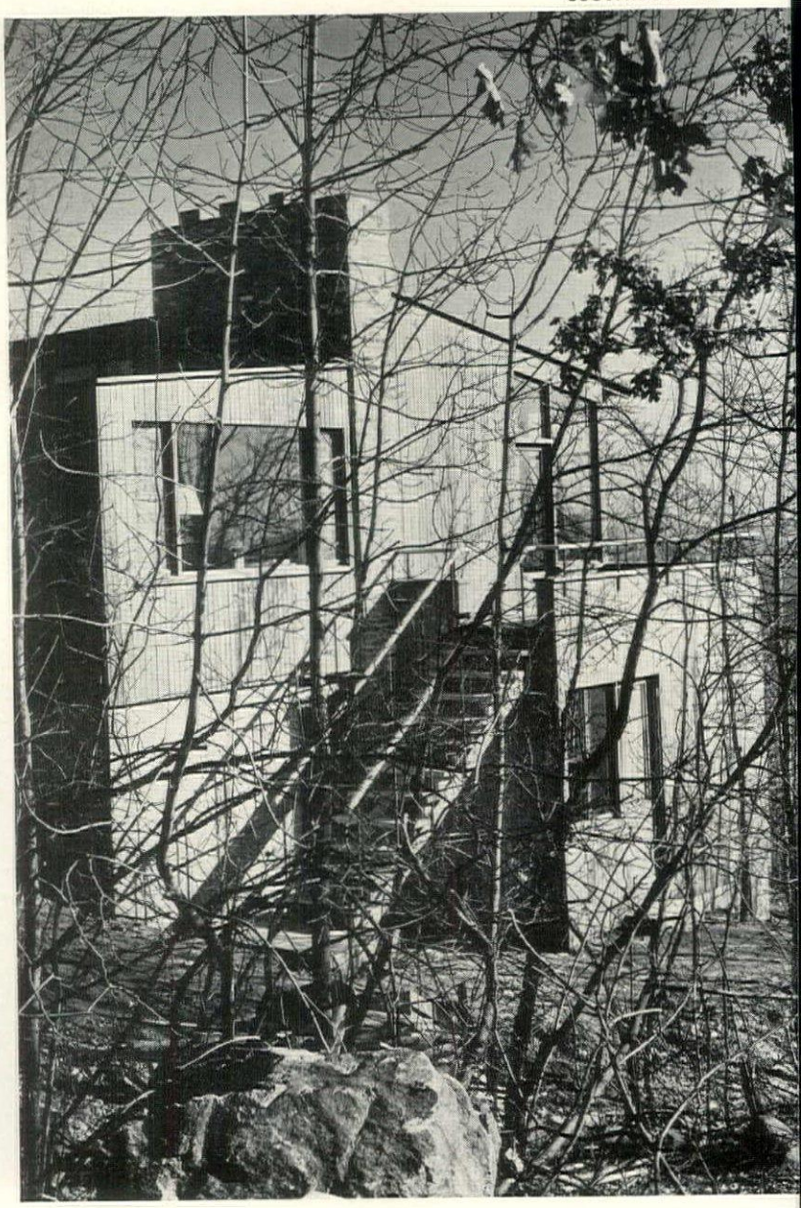
All photos, Ezra Stoller



FIRST FLOOR



SOUTHWEST SIDE

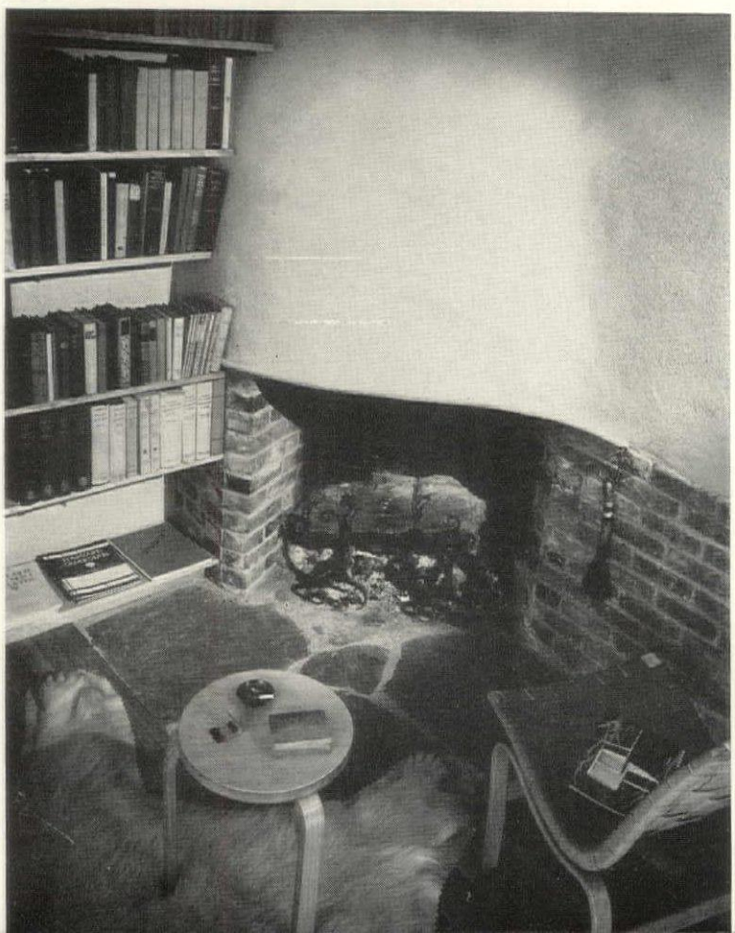


ENTRANCE SIDE



VIEW 1.

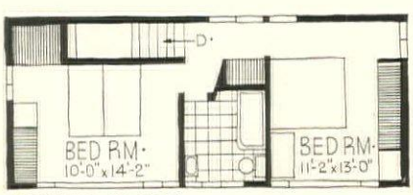
VIEW 2.



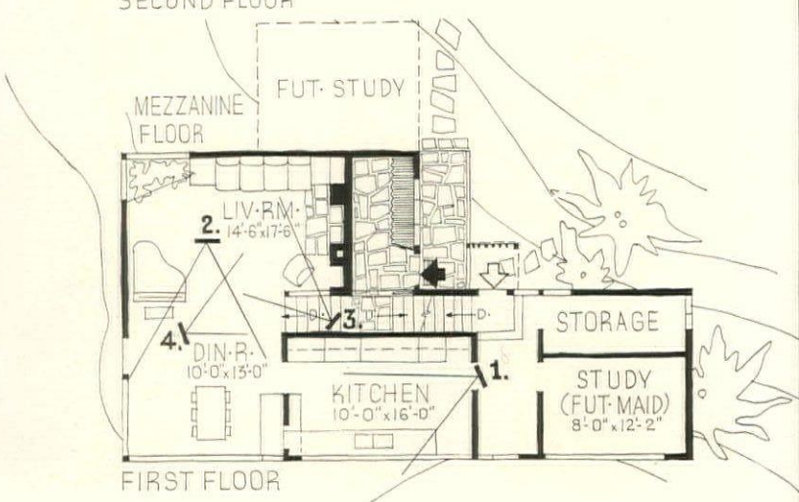
With three bedrooms, a maid's room and study, this is the largest of the five houses. Its plan was to a large extent established by site conditions, the solution showing a single story on one side and two on the other, with services in the excavated portion of the ground floor. As in the other houses, the main rooms face in a general southerly direction, getting sun and view at the same time. A technical feature of interest is the standard use of inexpensive steel basement sash wherever ventilation without view is required. As illustrated in the photograph of the entrance side, these windows are arranged in a clerestory providing through ventilation for the living and dining room. Equally interesting is the solution for the corner fireplace in the study; the photograph shows a very pleasant curved wall treatment which successfully maintains the simplicity so important in a small room. One of the finest of the interiors is the hall above, a space in which a smartly tailored appearance has been achieved with the most commonplace of materials. Cost: $9,230. Cubage: 21,780, at 42 cents per cubic foot.

All photos, Ezra Stoller

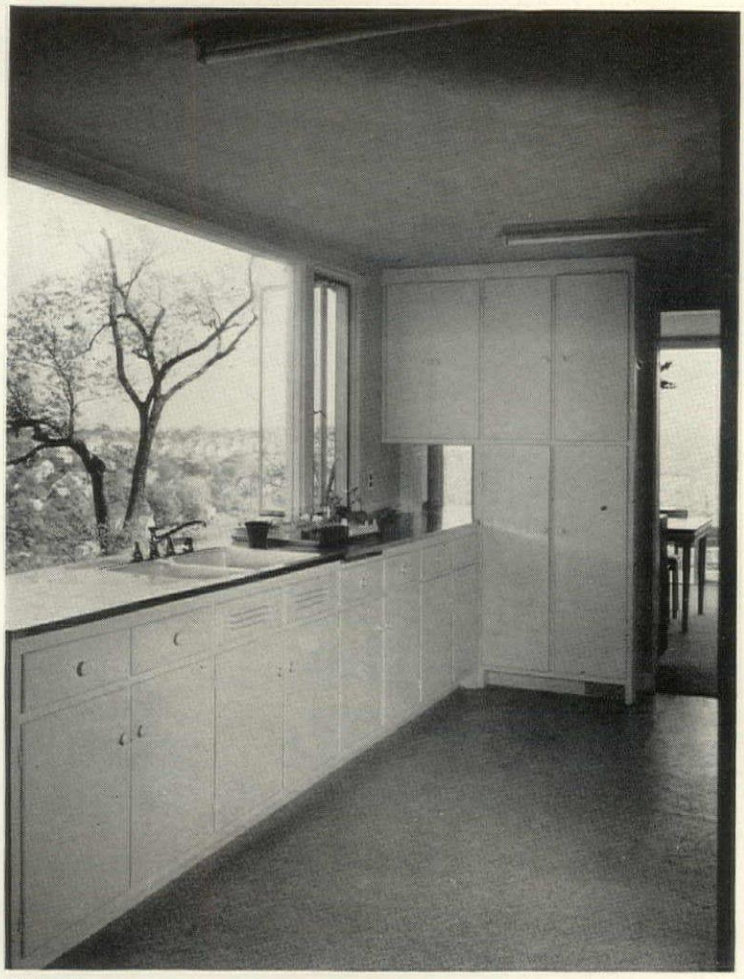




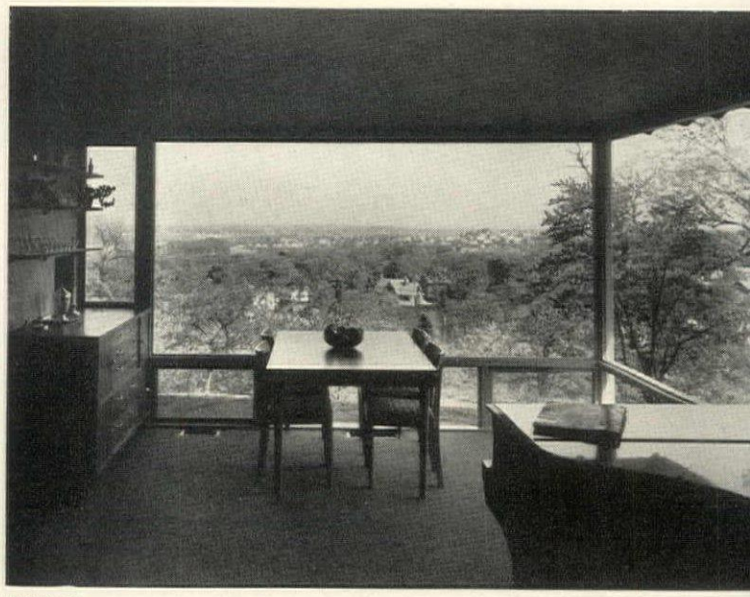
SECOND FLOOR



FIRST FLOOR

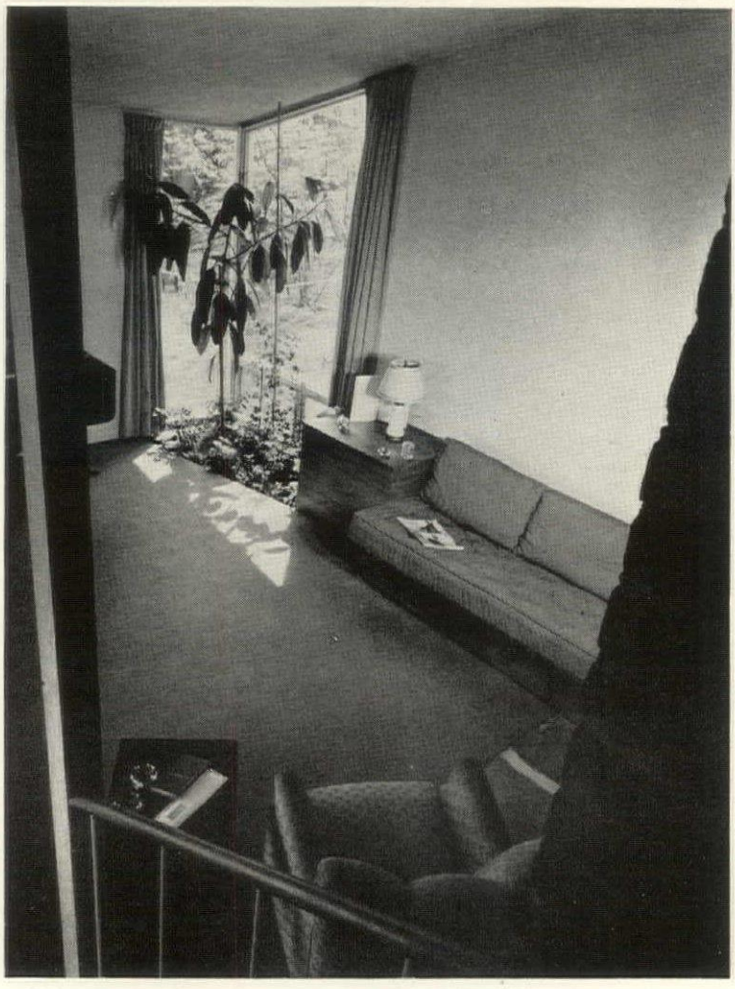


VIEW 1.

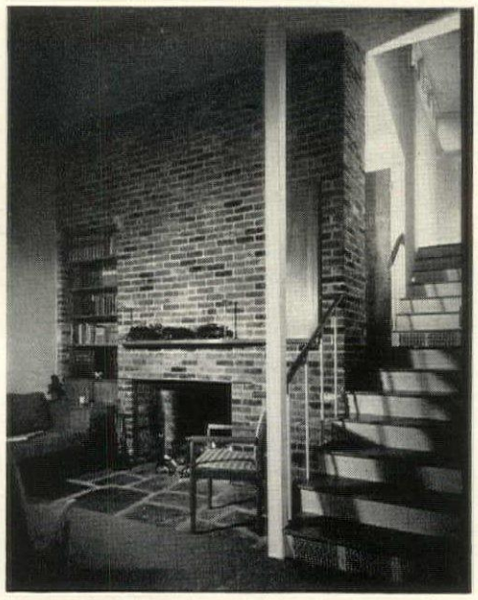


VIEW 2.

VIEW 3.

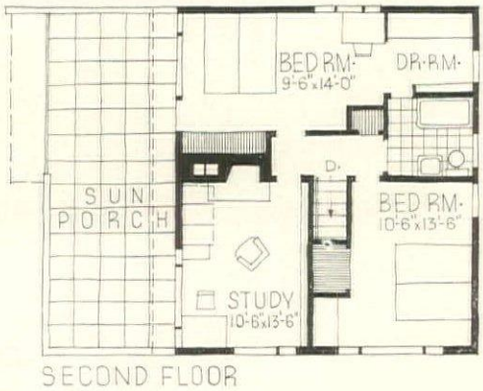


VIEW 4.

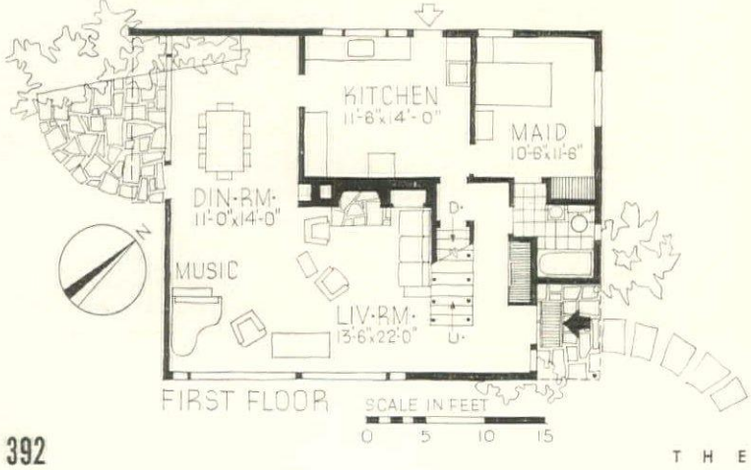


The Cushman house adjoins that of Mr. Koch, and an effort was made to relate the two designs, and to reduce intrusions on each other's privacy. The combination of fixed and movable sash is seen in an effective form in the dining space, where ventilators along the floor admit the necessary air without interrupting the view. Possibly the most spectacular treatment is that of the kitchen, where not even a splash board has been allowed to interfere with the view. An opening between the kitchen counter and the dining room is one of the old-style devices that have been revived in the contemporary house. The living room is several steps below the entrance level, and the added ceiling height has been accentuated by the vertical corner windows and chimney breast which extend without interruption to the ceiling. Cost: $6.700. Cubage: 15,590, at 43 cents per cubic foot.

All photos, Ezra Stoller



SECOND FLOOR



FIRST FLOOR

An important part of the designing technique on all of these houses was the elimination of needlessly complicated details and the reduction of expensive millwork where possible. One of the most characteristic results is seen in the photograph above, in the stairway. Two studs nailed flat against the framing members around the stair opening receive a number of square posts; in addition to being good-looking, the design was easily carried out by carpenters on the job. Here, as in the other houses, there is no separate dining room, although a greater degree of privacy is possible in the L-shaped plan. Kitchen, maid's room and bath form a compact unit, and the last is also available for use as a guest lavatory. The upstairs study was a requirement of the owner, who wished the room removed from the general living area. The dressing room was designed so that it might be converted into a baby's room. Cost: $7,650. Cubage: 21,140, at 36 cents per cubic foot.



CHRISTOPHER TUNNARD, LANDSCAPE ARCHITECT
TOBIASON BROTHERS, GENERAL CONTRACTORS

CONSTRUCTION OUTLINE*

FOUNDATION: Concrete block, Atlantic Brick & Tile Co. Cellar floor—concrete over cinder fill. Waterproofing — R.I.W., Toch Bros., Inc.

STRUCTURE: Exterior walls—t. & g. vertical fir boarding, 15 lb. asphalt felt paper Flintkote Co., ¾ in. matched spruce boarding, 2 x 4 in. studs, Kimsul insulation, Kimberly-Clark Corp., rocklath, U. S. Gypsum Co. and gypsum plaster. Floor construction —fir joists, sub-floor, resin-sized building paper Hershey Paper Co., white oak finish. Ceiling—rocklath or expanded metal and plaster.

ROOF: Covered with cold process roll roofing, Flintkote Co. Deck (Hartshorne hse.) —covered with tar and gravel and cypress flooring; (Wissmann hse.) — Celotex Co. Traffic Top.

FIREPLACE: Damper — Atlantic, Waldo Bros. Co.

SHEET METAL WORK: Flashing—16 oz. copper. Gutters (Hartshorne hse.) — 4 in. wide copper.

INSULATION: Outside walls and roofs—Kimsul, Kimberly-Clark Corp. Weatherstripping—Chamberlin Metal Weather Strip Co. Sound insulation (Hartshorne hse.)—1 in. Thermasote between living room and study Agasote Millboard Co.

WINDOWS: Sash and screens—Hope's Windows, Inc. Glass—quality B, Pennvernon, Pittsburgh Plate Glass Co.; some polished plate and sheet. Where translucent glass is indicated in Wissmann and Gordon houses Magnalite "A" is used, Mississippi Glass Co.

STAIRS: Treads—oak. Risers—pine.

FLOOR COVERINGS: Living room and halls —white oak. Halls—white oak and bluestone; (Wissmann hse.)—linoleum. Bedrooms and kitchens—linoleum, Sloane-Blabon Corp. and Armstrong Cork Co.

WALL COVERINGS: Kitchens — vertical matched fir boarding. Halls (Koch hse.)—vertical redwood clapboards. Bathrooms—Weldbord, U. S. Plywood Co.

DOORS: "Sturdibilt," M. & M. Woodworking Co. Garage doors (Wissmann and Hartshorne hse.)—Crawford Door Sales Co.

HARDWARE: By National Brass Co. and Schlage Lock Co.

PAINTING: Exterior walls—fir boarding dipped before application in Permodip, E. & F. King Co. Enamel paints—Wadsworth Howland Co.

ELECTRICAL INSTALLATION: Wiring system—BX. Switches—tumbler. Fixtures—Kurt Versen and Lightolier Co.

KITCHEN EQUIPMENT: Range (Koch hse.) —Universal electric, Landers, Frary & Clarke; remainder of ranges and refrigerators, except Wissmann refrigerator—Westinghouse Electric & Mfg. Co.

LAUNDRY EQUIPMENT: Washing machines (Koch and Hartshorne hse.)—Bendix Home Appliance Co.

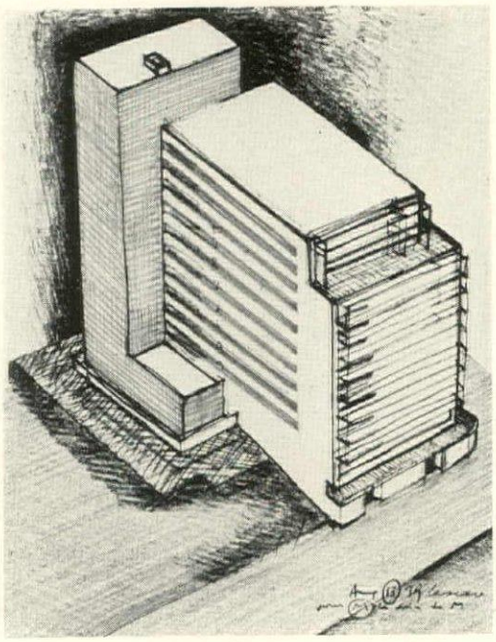
BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Cabinets —Charles Parker Co.

PLUMBING: Soil pipes—cast iron, Somerville Iron Works Co. Water pipes—red brass Revere Copper & Brass, Inc.

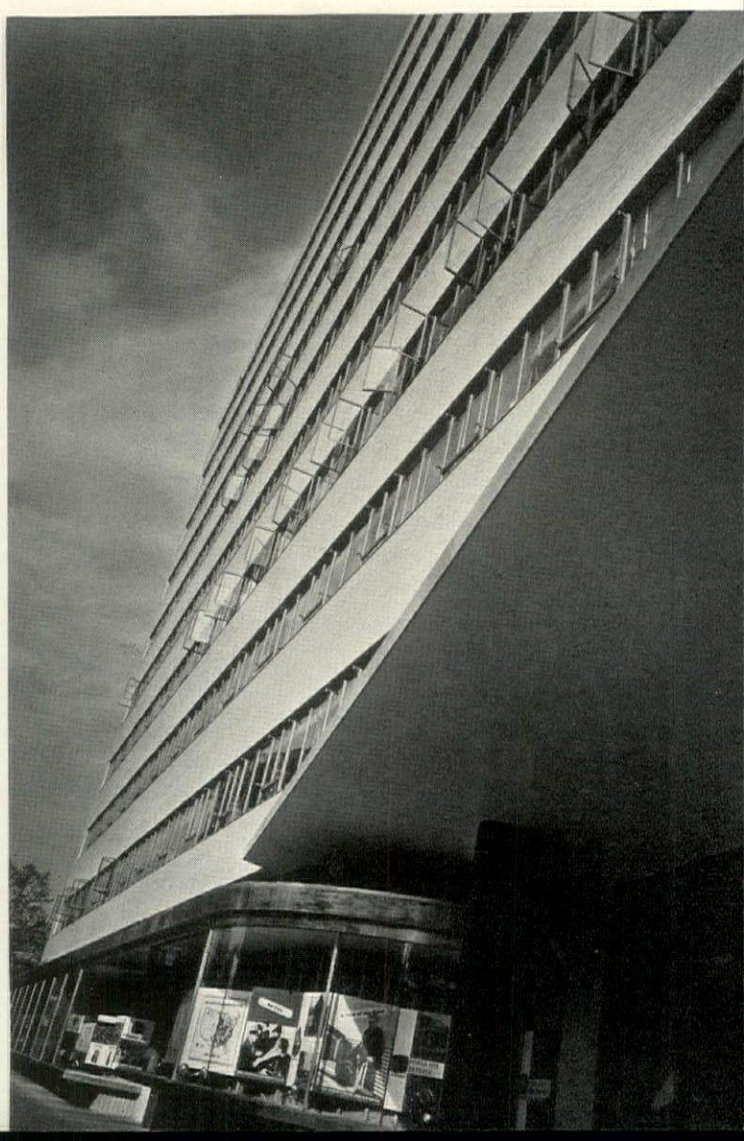
HEATING: Warm air system, Superfex, Perfection Stove Co.; (Wissmann hse.)—Kelly Oil Co. Thermostats—Perfection Stove Co. Water heater—Westinghouse Electric & Mfg. Co.

*Unless otherwise indicated similar materials are used for all houses.









LONGFELLOW BUILDING, WASHINGTON, D.

WILLIAM LESCAZE, ARCHITECT

FRED N. SEVERUD, STRUCTURAL ENGINEER

LESLIE J. HART, MECHANICAL ENGINEER

All photos, Ezra Stoller





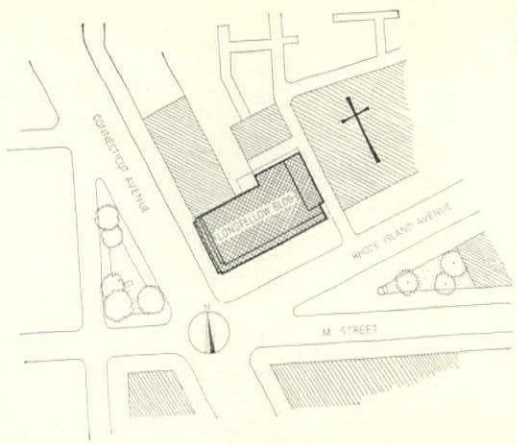
Peter Sekaer

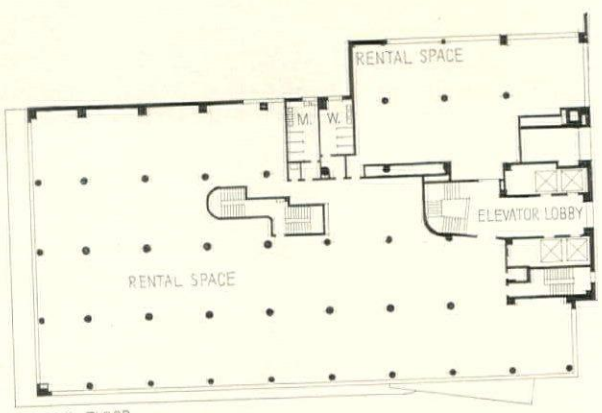
LONGFELLOW BUILDING, WASHINGTON, D. C.



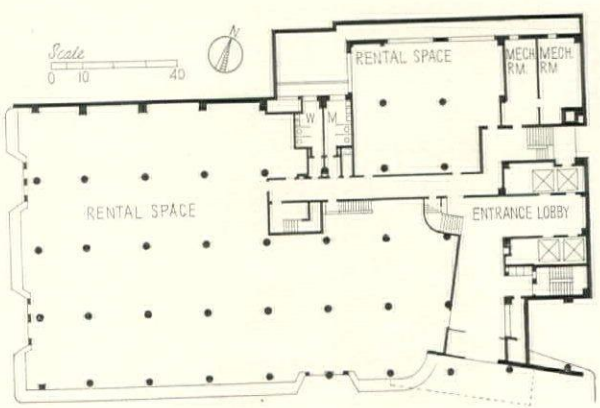
1940

WILLIAM LESCAZE, ARCHITECT





SECOND FLOOR



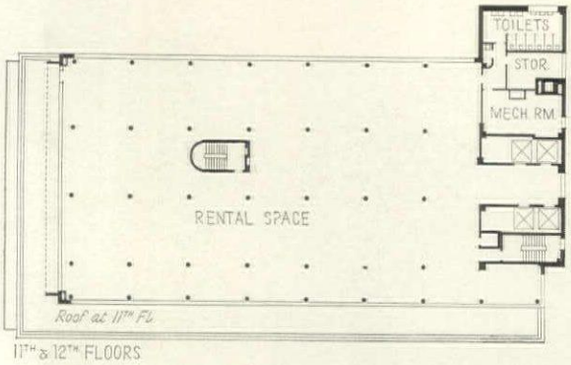
FIRST FLOOR

as a time when new buildings in Washington attracted public in- This was due not to any inherent vitality in the buildings them- but to the city's position as national capital, to its reputation as planned (in spots) U. S. metropolis, and to the persistent tend- the part of architects and laymen alike to be impressed by white alls, bronze doors and marble columns. The period of respectful, ply bored acquiescence came to an end around the time of the n Memorial, and an architectural mecca has gradually been trans- into a target. The old, old game of pretending that a nation of nics, farmers and shopkeepers is fittingly expressed by expensive from Vignola seems to have just about run its course.

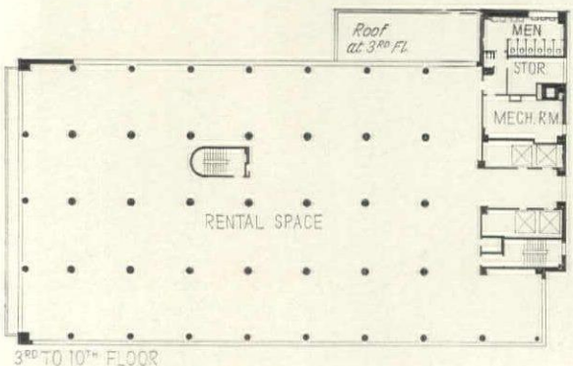
robably significant that Washington's first contemporary building slightest importance should be a commercial structure. Lescaze's fellow Building would stand out in any city as a first-rate piece of ; against the Washington background its effect is explosive. That a , honest, intelligent solution should cause more stir than fifty mil- dollars worth of assorted columns is in itself an interesting comment ne nature of the surroundings.

ke most of its public and commercial predecessors, the Longfellow ding was not conceived as a monument. It was designed to fit a site meet a budget, to provide a maximum of flexible office space, to ish the best possible working space for its population of 1,000. Its onies are not horizontal decorations, but sunshades, an architectural tion to the problems posed by summer air conditioning. Its windows large, as any sensible person knows they should be, and they extend hout interruptions because the columns are set back of the exterior lls. Curiously enough, in fulfilling the requirements and in expressing possibilities in a straightforward, unassuming way, the building has ken on a monumental quality and a dignity totally lacking in those ich tried to achieve such quality. If such a building is a discordant te in Washington, as some have claimed, it is because it so ruthlessly poses the fakery implicit in the architecture around it.

Ezra Stoller Photos

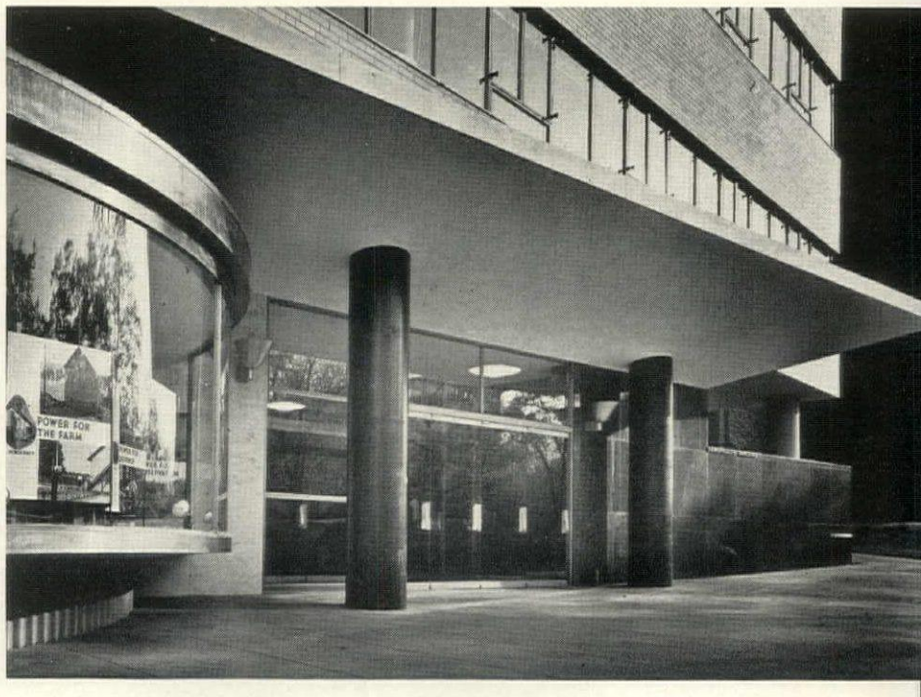


11TH & 12TH FLOORS



3RD TO 10TH FLOOR

MAIN ENTRANCE

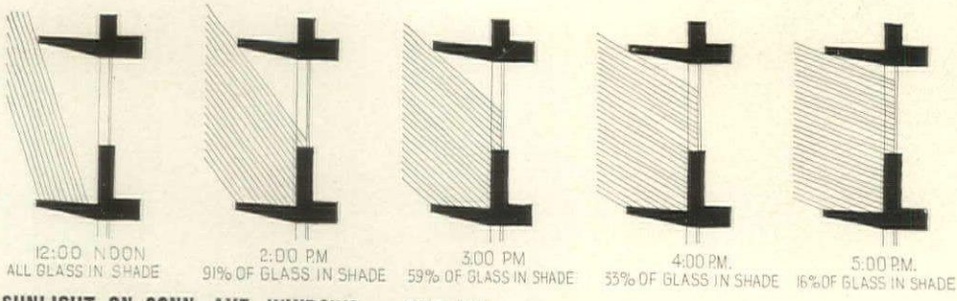


LONGFELLOW BUILDING, WASHINGTON, D.C.

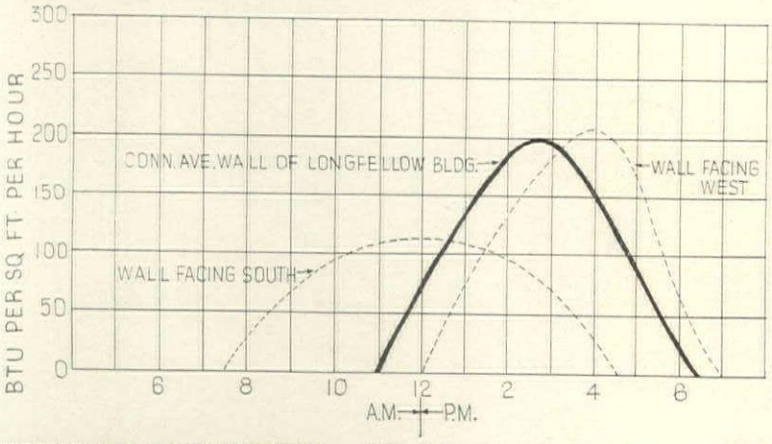


WILLIAM LESCAZE, ARCHITECT FRED N. SEVERUD, STRUCTURAL ENGINEER

LESLIE J. HART, MECHANICAL ENGINEER



SUNLIGHT ON CONN. AVE. WINDOWS — AUG. 1st.



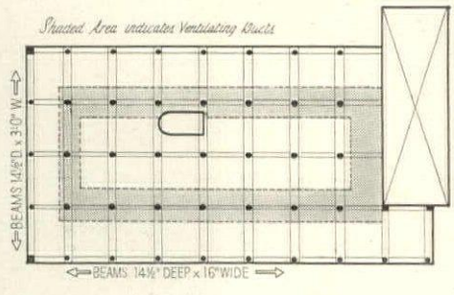
INTENSITY OF SOLAR RADIATION — AUG. 1st.



BALCONIES When the building was in the design stage, models were made and tested on a "sun machine" developed by the Loomis Laboratory to check the effects of sun heat on the windows and hence on the air conditioning installation. These investigations led to the provision of sunshades which were equipped with railings for reasons of safety. To discourage their use by tenants, access is restricted to one door which is ordinarily locked. The projections are located on the west side of the building and provide effective protection during the hottest hours of the day.

AIR CONDITIONING Each office floor from the second to the twelfth is provided with a separate, independent unit consisting of water coils, winter humidifying sprays, filters, etc. Air from the coils goes to three zones on each floor; these zones have south, west and north exposures and each can be supplied with a different temperature air to offset the effects of solar radiation during different times of the day. The system is designed to maintain indoor summer temperatures of 78° dry bulb and 65° wet bulb when the outdoor conditions are 95° and 78° respectively. The air temperatures are produced by the use of coils through which chilled water, obtained from a central refrigerating plant, is passed. In winter two oil-fired steam boilers provide steam to heat the water for the air conditioner coils.

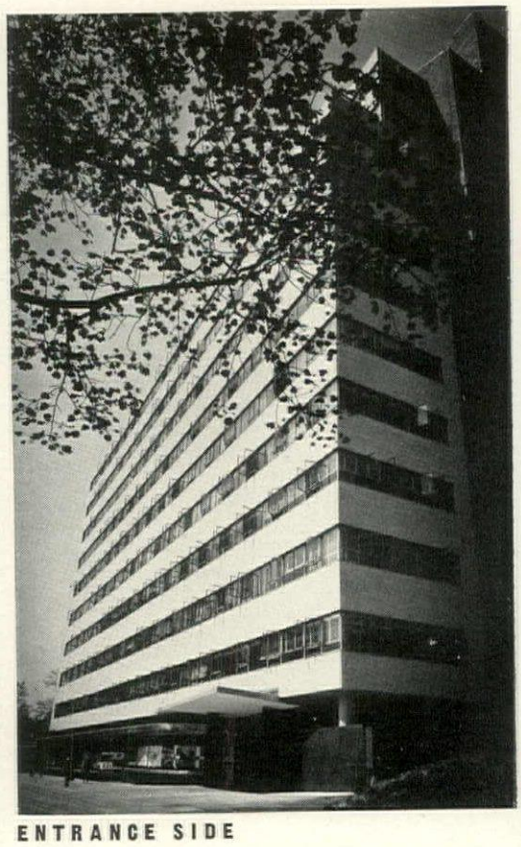
STRUCTURE The structure is of reenforced concrete in a unique arrangement. Two-way reenforced concrete slabs are supported on beams three feet wide in one direction and 16 in. in the other. By using three-foot wide beams the short span of the slabs was limited to 16 ft., thereby avoiding the penalty imposed by the District building codes on spans exceeding this length. The shallow beams (14½ in. deep) were desirable due to the air conditioning ducts which pass under them.





STAIRS

Ezra Stoller

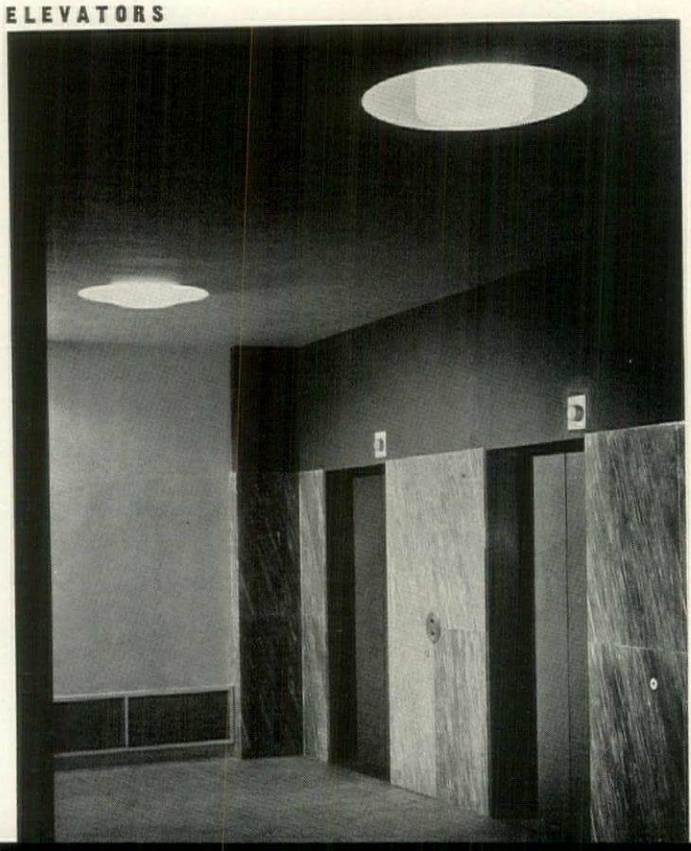


ENTRANCE SIDE

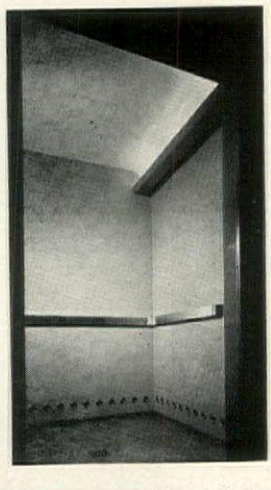
Details of the interior echo the unpretentious simplicity of the exterior. As the illustrations show, however, they are not for this reason lacking in refinement or interest. The lighting fixtures show good use of several well designed standard types. The corridor walls, constructed of movable metal partitions, are handsome in themselves, and in character with the building. Occasionally, as in the gay railing of the stairway leading to the second floor, the careful and disciplined approach is relaxed with fortunate results. Lighting in the elevator cabs is extremely well solved by means of two indirect troughs at each side.

MAIN LOBBY

ELEVATORS



CAB

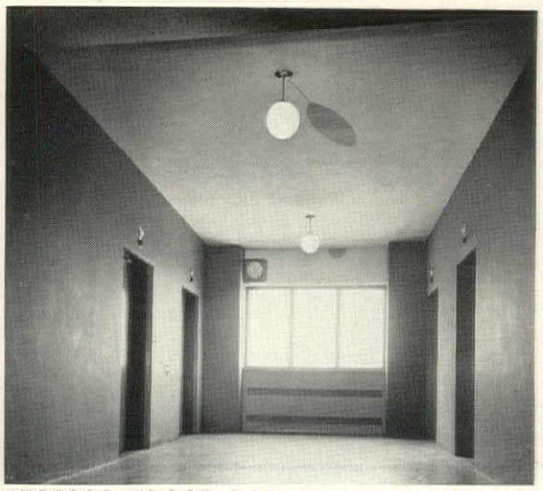


LONGFELLOW BUILDING, WASHINGTON, D. C.

WILLIAM LESCAZE, ARCHITECT



CORRIDOR



TYPICAL FLOOR LOBBY

JOHN McSHAIN, INC., GENERAL CONTRACTOR

CONSTRUCTION OUTLINE

FOUNDATIONS: Reenforced concrete. Waterproofing—membrane.

STRUCTURE: Exterior walls—brick, terra cotta backing and split tile furring, plaster. Columns—structural steel to 4th floor; reenforced concrete above. Structural steel—Bethlehem Steel Co. Floor construction—reenforced concrete floor. Ceiling—acoustical plaster under ducts and Acousti-Celotex tiles under slab, Celotex Corp.

PARTITIONS: "M-P" Movable Steel Partitions and "Metlwal" Paneling, manufactured by the Martin-Parry Corp., used throughout the twelve floors.

ROOF: Tar and gravel, 20 yr. bond, Warren Ehret Co.

SHEET METAL WORK: Flashing—copper. Ducts—galvanized iron.

WINDOWS: Sash—casement, Hope's Windows, Inc. Glass—plate, Libbey-Owens-Ford Glass Co. Glass blocks—Pittsburgh-Corning Corp.

STAIRS AND ELEVATORS: Stairs—steel, cement treads, Potts Mfg. Co. Elevators—4 gearless traction machines, Haughton Elevator Co.

FLOOR COVERINGS: Asphalt tile—Tiletex Co. Lobby—terrazzo, De Paoli & Co.

WALL COVERINGS: Lobby—marble, Gray Knox Marble Co.; granite, Vickery Stone Co. Remainder—plaster.

WOOD AND METAL TRIM: Trim—metal, Dahlstrom Metallic Door Co. Doors—wood, John C. Knipp & Sons. Main entrance doors—Tuflex, Libbey-Owens-Ford Glass Co.

HARDWARE: By Schlage Lock Co., Stanley Co., Russell & Erwin Mfg. Co.

PAINTS: By Edward Minte Co.

ELECTRICAL INSTALLATION: Conduit and wire—National Electrical Products, continuous plug-in strip along outside walls. Fixtures—Westinghouse Electric & Mfg. Co.

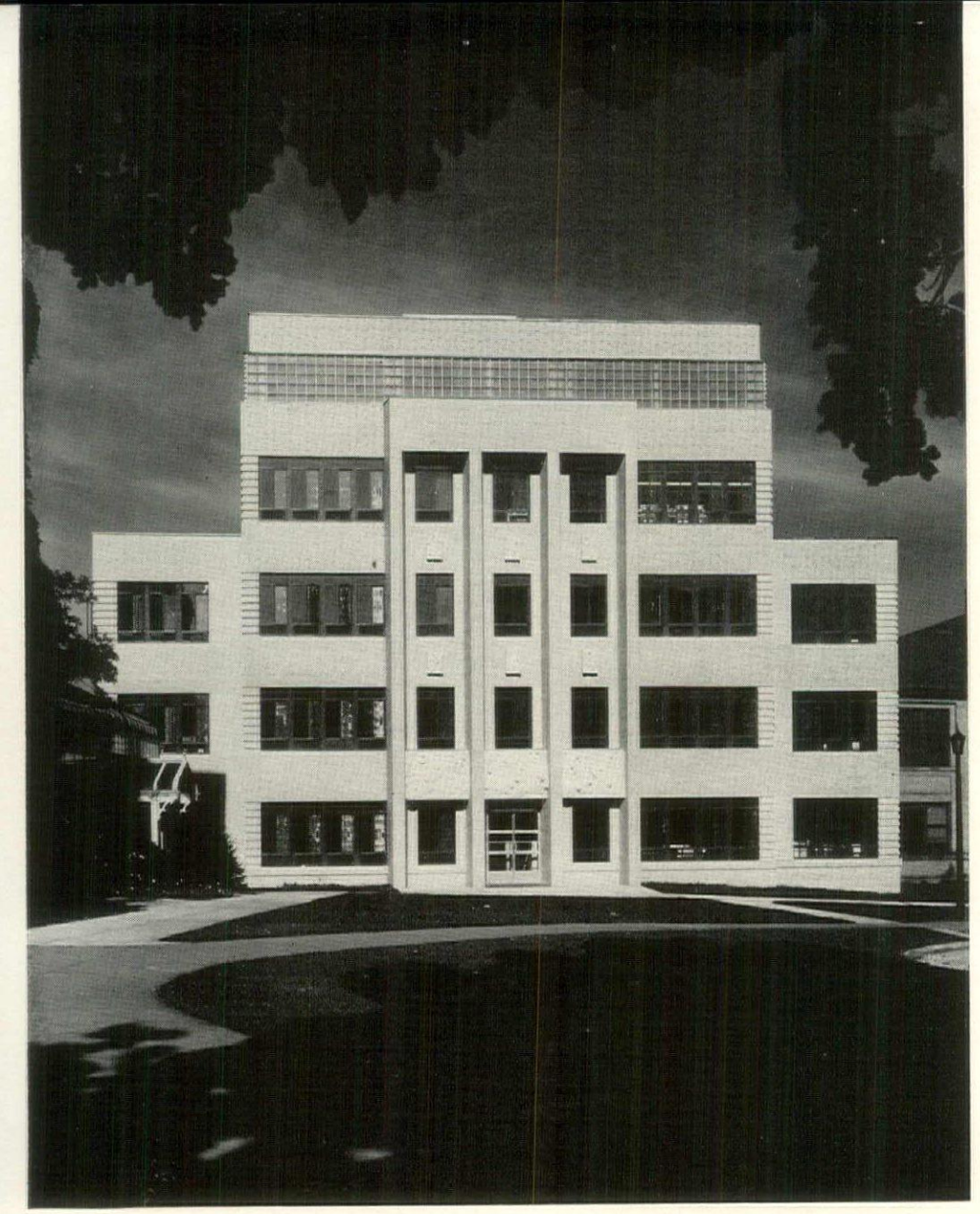
PLUMBING: Galvanized steel pipes—National Tube Co. Hot and cold water pipes—copper, Bridgeport Brass Co. Pumps—Yeoman Bros. Drinking water system—Filtrine Mfg. Co. Toilet fixtures—Kohler Co.

HEATING AND AIR CONDITIONING: All year air conditioning system, humidifying, heating, cooling and de-humidifying; Carrier Corp. centrifugal refrigerating unit. Boiler—Burnham Boiler Co. Thermostats—Johnson Service Co. Water heater—Richmond Engineering Co.



MINNESOTA

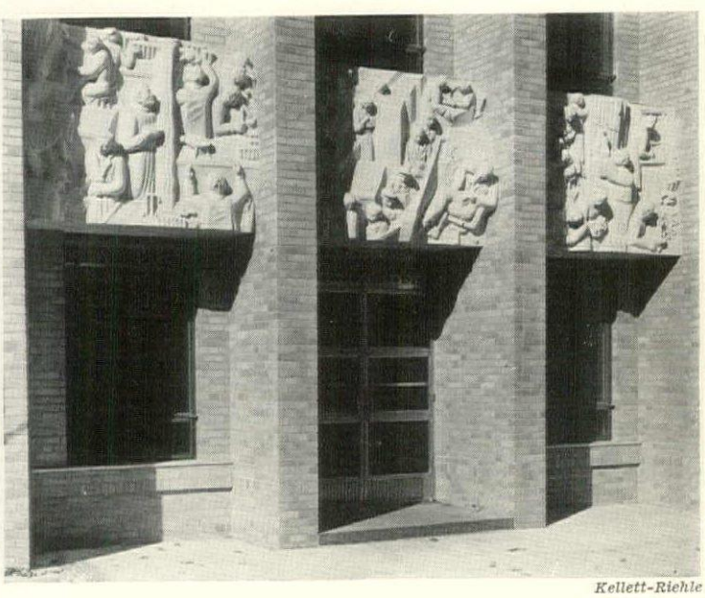
MINNEAPOLIS, MINN.



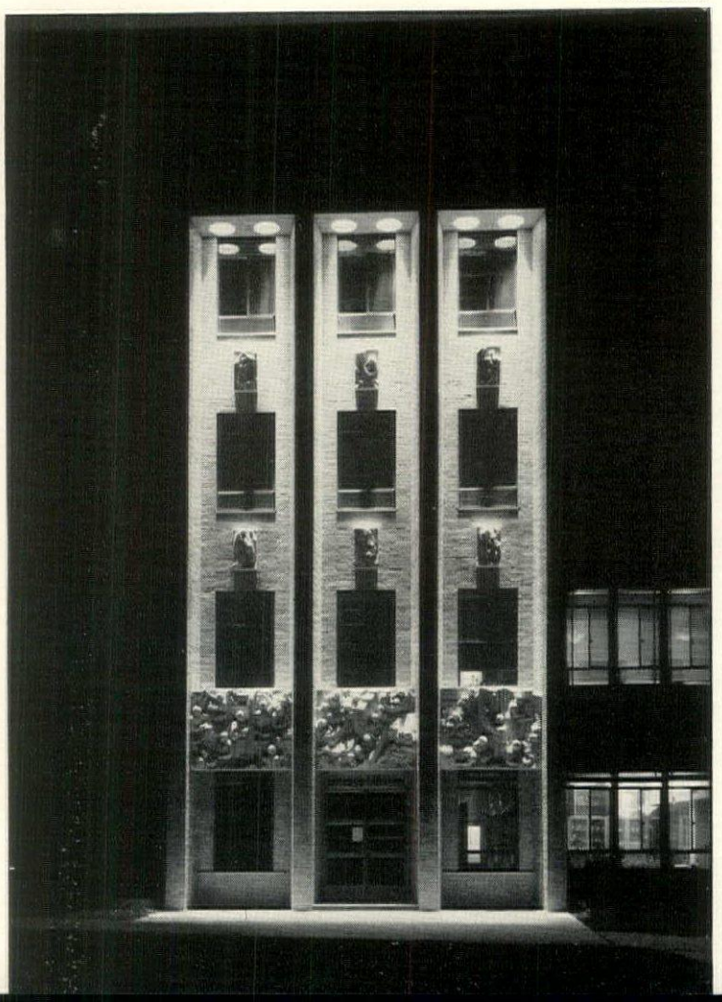
The buildings on the University of Minnesota campus are of brick, with the usual classical porticoes as dominant architectural motives. In this new building, which makes no attempt to recall the previously established style, a degree of harmony was created by the use of brick and by the vertical central element which suggests a link between the old and the new. Set between the projecting brick piers are the massive sculptured panels by Hillis Arnold, with smaller blocks in the spandrels above. The sculpture itself is not only of unusual interest and quality, but it shows a sensitive understanding of the possibilities of the medium in a modern building, and functions with equal effectiveness by day and under artificial illumination.

The building houses four divisions of the State Department of Health: Administration, Sanitation, Preventable Diseases, and Child Welfare. For the classrooms, offices and laboratories only movable partitions have been used, as previous experience indicated that the greatest flexibility in layout must be maintained. The top two floors, enclosed by walls of glass block, are used as quarters for animals. An interesting technical feature is the use of steam pipes under the garage ramp to prevent the formation of ice.

Kellett-Riehle



Kellett-Riehle



DEPARTMENT OF HEALTH

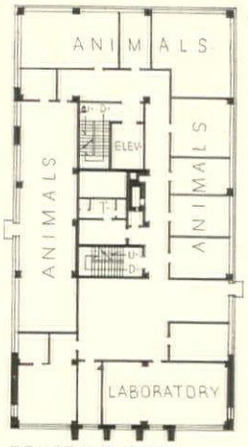
WILLIAM M. INGEMANN, ARCHITECT



LOBBY *Kellett-Riehle*



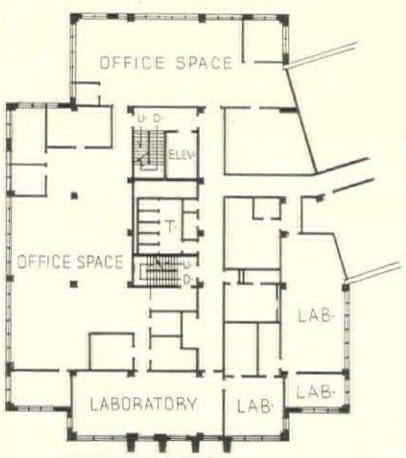
CORRIDOR *Nestler & Grover*



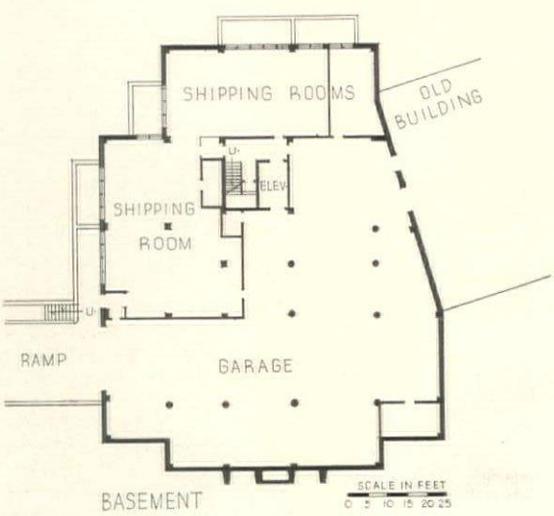
FOURTH FLOOR



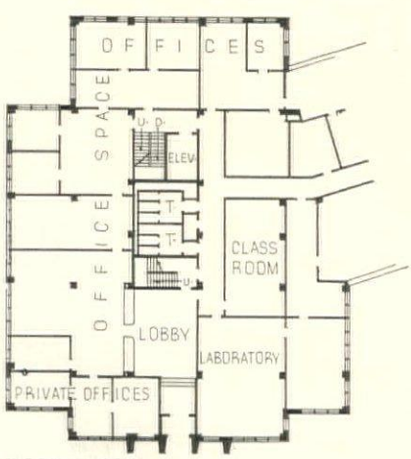
THIRD FLOOR



SECOND FLOOR



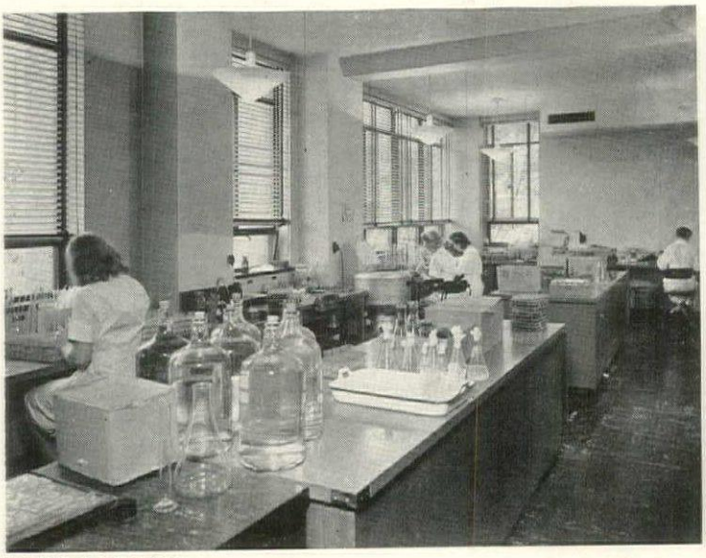
BASEMENT



FIRST FLOOR

MINNESOTA DEPARTMENT OF HEALTH

W. M. INGEMANN, ARCHITECT

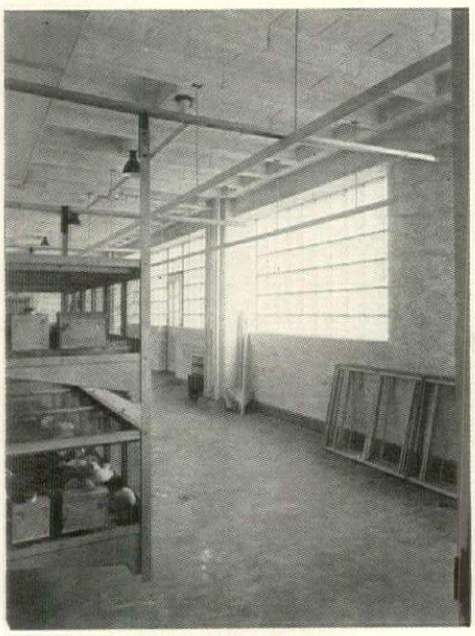


LABORATORY

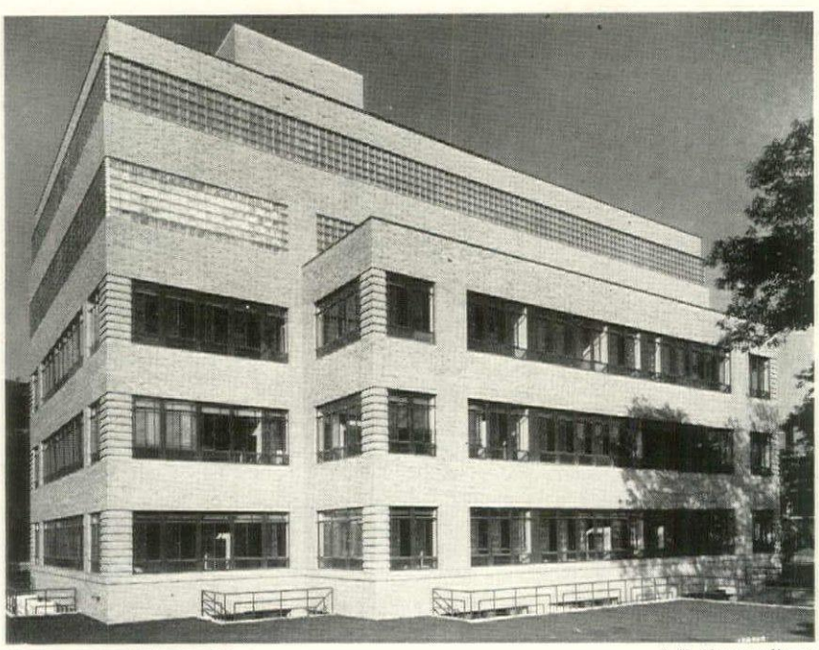


LIBRARY

Nestler & Grover Photos



FIFTH FLOOR—ANIMALS



SIDE ELEVATION

J. H. Kammerdiener

CONSTRUCTION OUTLINE

FOUNDATION: Reenforced concrete.

STRUCTURE: Exterior walls—face brick backed with hollow clay tile, Mason City Brick & Tile Co.; upper floors backed by cinder blocks, Superior Brick Co. Movable partitions—Transite. Johns-Manville. Columns—reenforced concrete. Floor construction—reenforced concrete joist with clay tile fillers. Ceilings—plaster or Acousti-Celotex tile, Celotex Corp.

ROOF: Covered with pitch and gravel over concrete, Koppers Co.

SHEET METAL WORK: Flashing—copper. Ducts—Armco iron, American Rolling Mill Co.

INSULATION: Roofs—Armstrong Cork Co.

WINDOWS: Sash and screens—steel casement, Fenestra, Detroit Steel Products Co. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Glass blocks—Owen-Illinois Glass Co.

STAIRS AND ELEVATORS: Stairs—terrazzo treads and risers; railings—plaster. Ramps (garage)—heated with steam coils to prevent ice accumulating. Elevators—Haughton Elevator Co.

FLOOR COVERINGS: Lobby and laboratory—sheet rubber, Goodyear Sheet & Rubber Co. Remainder—mastic tile, Thomas Moulding Co. Animal house—cement.

WALL COVERINGS: Entrance lobby wainscot—Hungarian oak; remainder—plaster.

FURNISHINGS: Laboratory table — Kewaunee Mfg. Co.

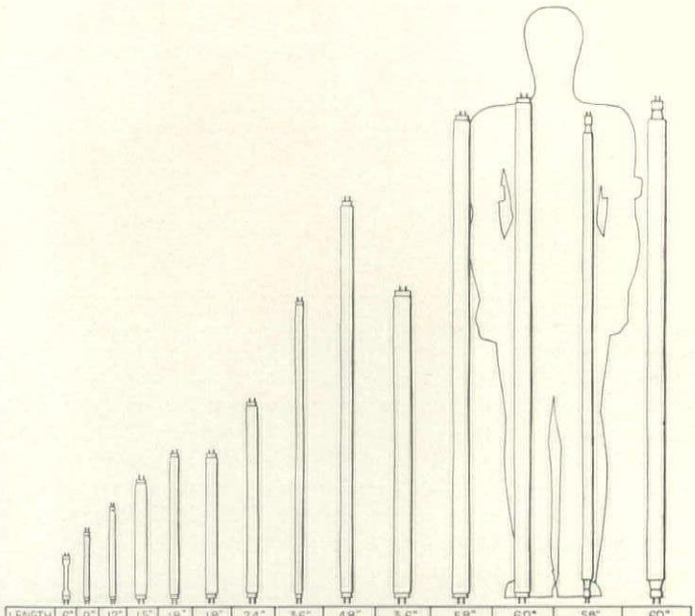
WOOD AND METAL TRIM: Trim and doors—hollow metal, Trussbilt, Inc. Bronze doors—Thorp Fireproof Door Co. Partitions doors—flush wood, Johns-Manville Co. Garage doors—Overhead Door Corp.

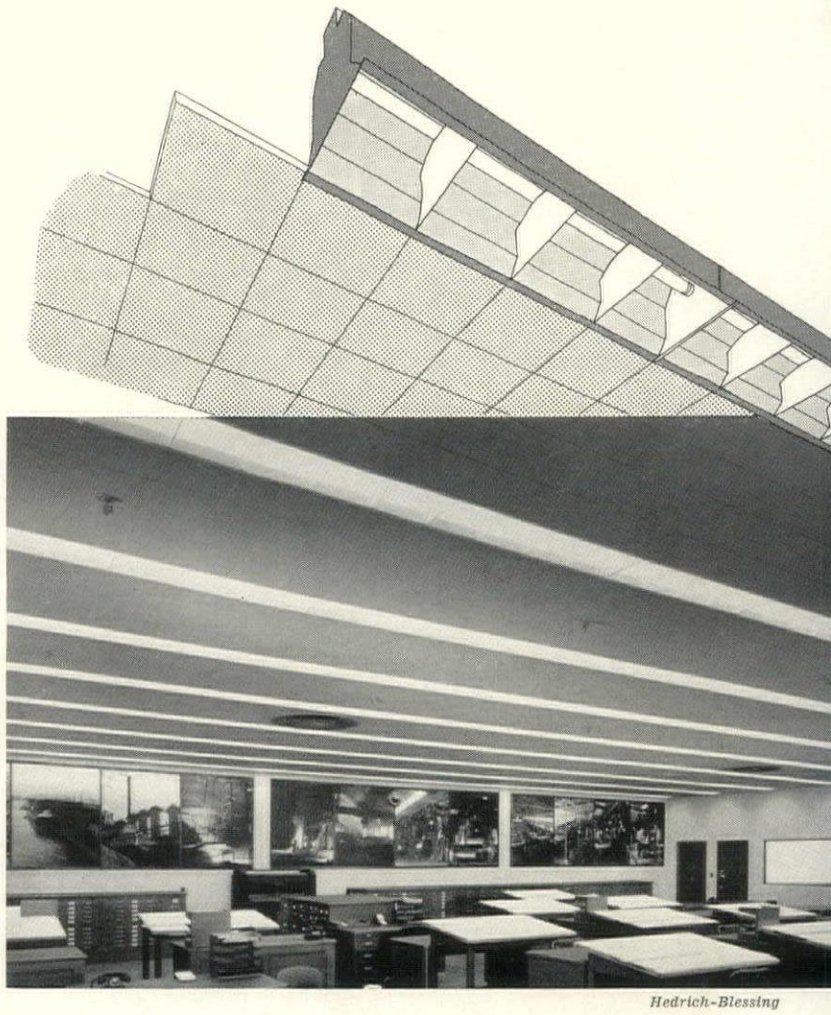
HARDWARE: By Yale & Towne Mfg. Co. and Baker Iron Works.

ELECTRICAL INSTALLATION: Switches—General Electric Co. Fixtures—Westinghouse Electric & Mfg. Co.

PLUMBING: Soil, waste and vent pipes—Grinnell Co., Inc. Cold water pipes—National Tube Co. Hot water pipes—Anaconda, American Brass Co. Pumps—Nash Engineering Co. Toilet fixtures—American Radiator-Standard Sanitary Corp.

HEATING AND AIR CONDITIONING: Heating system—Warren Webster Co. Air Conditioning system—American Blower Co. Radiators—American Radiator Co. Grilles—Hart & Cooley. Thermostats—Minneapolis-Honeywell Regulator Co.





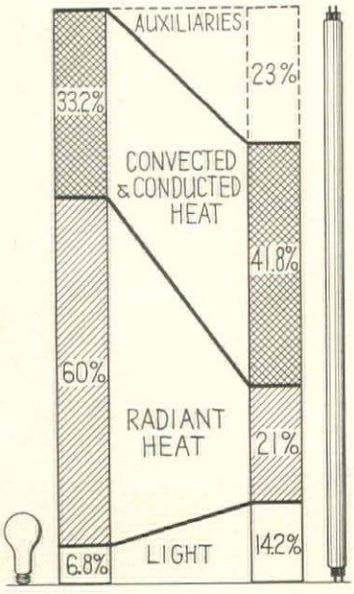
The growing family of fluorescent lamps and one of their most successful applications — recessed "troffer" lighting. Lamps range in size from 4 to 100 watts, 6 to 60 inches. The newest addition is the "RF" type, a highly efficient blue-white lamp for industrial applications. Photo shows office of the All-Steel Equip Co., where continuous lines of 4 ft., 40-watt lamps on 5 ft. centers provide 60 foot-candles of even, glareless illumination.

Hedrich-Blessing

FLUORESCENT LAMPS

The fluorescent lamp has been variously described as a miracle of modern science and a hedge against expiring patents, as a big step forward in lighting technique and a step backward which has revived practices 20 years out of date, as the closest approach to artificial daylight and an unnatural light source which causes headaches and fatigue. It has been hailed for its economy and criticized for its awkwardness, welcomed as an answer to unsolved problems and cursed for the complexities that accompany its use. And meanwhile, in the three brief years since it left the laboratory, its general acceptance has proved it an overwhelming and wholly unexpected success. The immediate, widespread use of the fluorescent lamp for general lighting purposes was not anticipated, even by its sponsors. At the time of its introduction, the assumption was that the lamp's outstanding advantage—its ability to produce colored light with extraordinary efficiency—would tend to suggest its first use for primarily decorative applications. Many of the problems connected with its adoption for general lighting purposes were still unsolved; available types were few in number and limited to low wattages; auxiliary equipment and fixtures were in the development stage; lamp manufacturers were unprepared to supply a large scale demand for a new and radically different product.

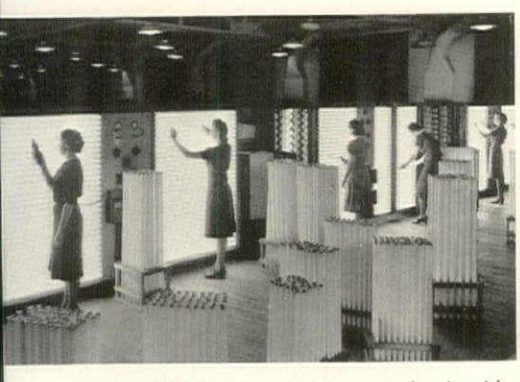
The fact that even before these handicaps were overcome the fluorescent lamp found its way into general lighting work more than proves its ability to compete on an equal footing with the hitherto almost universal wire filament type. It is no warrant for the assumption, however, that the lighting millennium has arrived and here, at last, is the perfect light source. Fluorescent lamps have their disadvantages as well as their advantages, like other artificial sources of illumination—even their vaunted efficiency is less than a sixth of what is theoretically possible in the production of white light, although double that of comparable incandescent lamps and 350 times that of the candle. There is no question of fluorescent lamps replacing the wire-filament type in every instance: for some purposes, such as spotlighting, they are wholly unsuited. But for most lighting tasks, and especially in those cases where lighting equipment becomes an integral part of the building design, good practice now demands a careful weighing of the relative advantages and disadvantages of fluorescent and incandescent lamps before a final choice is made. And such a comparison calls for a thorough understanding of a subject which even the partisans of fluorescent will admit is complicated and abstruse.



EFFICIENCY of wire filament and fluorescent lamps, on the basis of total energy consumed. The percentage of light production of the 40-watt white fluorescent lamp—which consumes a total of 52 watts—is more than double that of the same size incandescent lamp, and the amount of radiant heat produced about a third of incandescent.



INSPECTION of the glass tubes used in making fluorescent lamps, after their inside coating of fluorescent powder has been washed and baked on. Phosphors produce light of various colors, but are all white when unlighted.



"SEASONING" completed lamps prior to shipment. Proper seasoning is essential to avoid "whirl" and "snake effect" in service.

OPERATING PRINCIPLE

Fluorescent lamps employ the invisible ultra-violet radiation given off by an arc in mercury vapor to activate fluorescent powders which produce visible light. Like other low-pressure mercury discharge sources the lamp consists simply of an evacuated glass tube containing a drop of mercury and a small amount of argon gas with an electrode sealed in each end. Unlike other lamps of this type, however, the current density and vapor pressure are adjusted to produce directly only a small quantity of visible light. Depending on these factors, mercury "resonates" at various wavelength lines, some inside and some outside of the visible spectrum; fluorescent lamps are tuned to crowd more than half of their input energy into a single line in the invisible ultraviolet which is particularly effective in activating the fluorescent coating.

Without this coating, the lamp produces only a pale blue light representing less than 1½ per cent of the energy it consumes. With it, it produces more light than a corresponding vapor lamp and more than twice as much light as a wire filament lamp of the same wattage. Even more important, the resulting light is not limited as to color by the spectral characteristics of the vapor in which the arc is formed, as in other discharge lamps, nor solely to white light of a limited color temperature, as with the wire-filament type. Instead, light of various colors may be produced directly, through the use of suitable fluorescent powders, and the different powders may be mixed in various proportions to produce white light of varying color temperatures.

To facilitate starting, lamp electrodes are in filament form, and are connected in series and pre-heated before the arc is struck. This results in a momentary delay when the lamp is switched on, sometimes accentuated when the opening of the circuit coincides with dead center of the alternating cycle. Lamps are designed for A-C operation, but may be run on direct current with special ballast equipment.

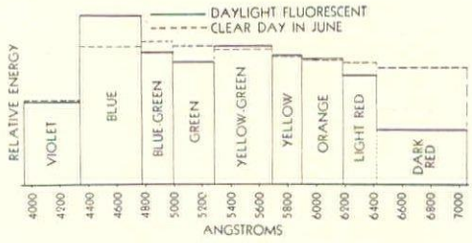
Unlike the filament lamp, size and shape are dictated by the operating principle; the present 100-watt, 60 in. lamp and 4-watt, 6 in. lamp approach the practicable limits in both directions. On the same basis, a 1500-watt lamp would be 35 ft. in length.

ADVANTAGES

In addition to its high efficiency relative to other methods of producing white and colored light, the fluorescent lamp offers a number of other advantages which particularly recommend its use for built-in lighting, including long life, sturdy construction, low surface temperature and about half as much total heat and a third as much radiant heat per lumen as incandescent. Its elongated, tubular shape is well adapted to cove lighting and lighting recesses and panels, and helps evenly to distribute low wattages over large areas.

COLOR QUALITY (WHITE)

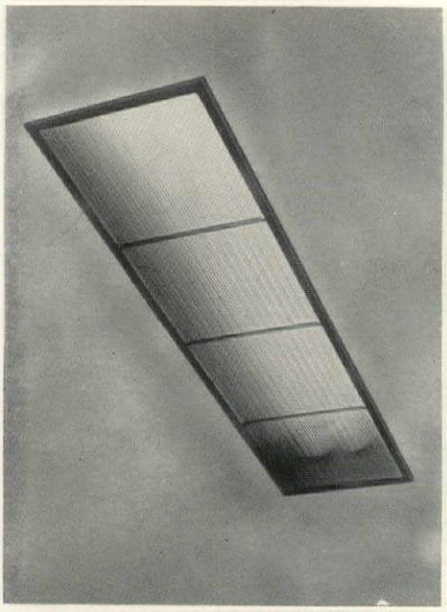
The ultimate basis of comparison between various sources of artificial light is the kind of light produced—the question of its quality or "color temperature." Fluorescent lamps for general lighting purposes produce light of somewhat different color temperatures from the familiar yellowish-white of the incandescent lamp: "daylight," "3500° white," and "soft white."

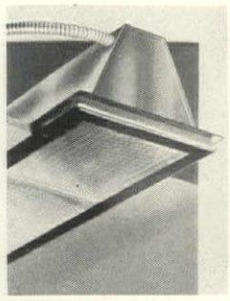


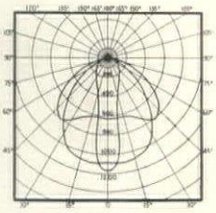
At the time of its introduction, it was generally taken for granted that the ability of the fluorescent lamp to produce light approximating daylight in color at almost the same efficiency as white light would result in the widespread use of the daylight type. This has not proved to be the case. For special uses, where the blue-deficiency of tungsten is important—and there are many such uses—it has been of real value. But for general lighting the choice, as evidenced by the proportionate sales of the various types, has fallen more and more to the white and soft-white lamps.

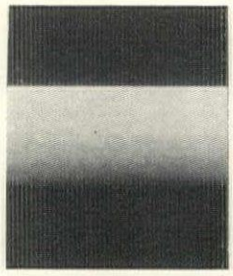
This tendency to demand a color as near as possible to the filament type is no doubt due partly to habit and partly to a desire to use both kinds in a single installation. It is also due, however, to a fundamental and hitherto little-recognized advantage of the tungsten lamp, and a corresponding defect of the fluorescent type. Neither lamp produces truly white light, in the sense of a perfectly balanced spectrum with equal emphasis on all colors. The tungsten spectrum is badly out of balance on the red side, with a decided deficiency in the violet, blue, and green which dulls these colors and makes them appear darker than they really are. Its distortion of the red, on the other hand, has the accidental but important advantage of flattering flesh tones and emphasizing red and pink, so that the complexion, and certain classes of merchandise such as meats appear better by incandescent light than out of doors. And because pretty girls and pork chops have both enjoyed this privilege for so long a time, a vested interest has been established that no one wants to upset.

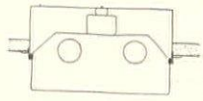
The spectra of the various fluorescent lamps, while they are better balanced than that of the wire filament type, are all deficient in red. This is due to the fact that while suitable phosphors are available in a variety of colors ranging from blue to pink, and these can be combined to produce white light in a variety of shades, a practicable red phosphor has still to be discovered. The resulting deficiency makes it impossible to produce a fluorescent lamp exactly matching tungsten in color, and is

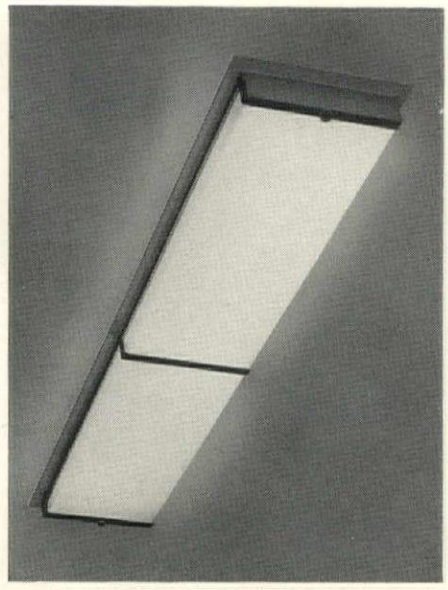












RECESSED, control lens ceiling fixture housing two 48 in., 40-watt lamps. Interchangeable prismatic lenses provide precise light control for intensive, normal, and extensive distribution, are easily removable to service lamps. Holophane Co., Inc.

PLASTIC shield of "Louverglas" covers this attractive ceiling fixture, its molded shape providing "spill light" to illuminate the surrounding ceiling. Detail photo shows tiny vanes which shield lamp from view, except from directly below. Ivan T. Johnson Co., Inc.

most apparent in the light from the daylight lamp, with its preponderance of blue, and especially evident when either the daylight or white lamp is compared with tungsten, with its decided overemphasis on red. In the new "soft white" lamp its effect is largely overcome by a decided increase in the proportion of pink light produced.

Still another factor which affects the color of the light from the fluorescent lamp is the presence of blue "line spectrum" from the mercury discharge within the tube. In the white lamps this is taken into account in balancing the spectrum and amounts to less than ten per cent of the total light produced, but it may have something to do with the way deep blues sometimes "go purple" under fluorescent light.

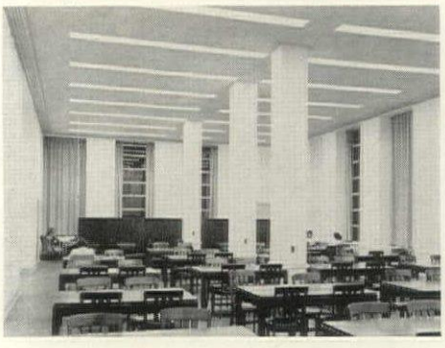
Actually, many of the problems arising out of the color of fluorescent lamps may be just as fairly attributed to tungsten, since they exist only in comparison. The color differences between the various fluorescent lamps and the wire filament type are apparent only in juxtaposition: where lamps of a single type are used throughout a given area it is difficult to tell which color has been used; where isolated lamps of either type are employed in conjunction with general illumination of the other kind both become painfully evident. And with both types the color of the walls and decorative scheme have as much to do with the ultimate result as the color of the light—with fluorescent if anything, somewhat more flexible in this respect than incandescent.

COLORED LAMPS

In the production of colored light for decorative purposes, the fluorescent lamp has no rival. Five colors are available; in three of these, the blue, green, and pink, the color is produced directly from a suitable phosphor, and the lamp appears white when unlighted. The remaining two colors, gold and red, are obtained by coating the inside of the tube with pigment, and appear in their natural colors at all times.



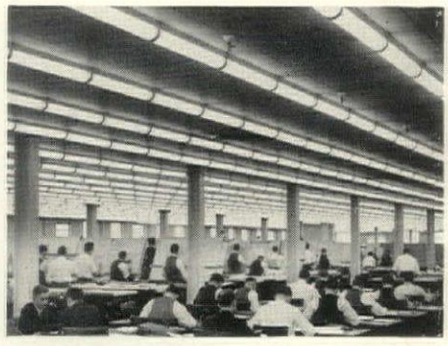
SUSPENDED ceiling fixture of attractive design, providing both direct and indirect illumination. Accommodates four to six 40-watt lamps. F. W. Wakefield Brass Co.



LIBRARY lighting with continuous, recessed ceiling fixtures covered by diffusing panels, providing 35 foot-candles. The Miller Co.



INDIRECT lighting from continuous troughs, using a double row of the new 100-watt, 60 in. white lamps. Curtis Lighting, Inc.



CONTINUOUS, surface type luminaire with glass shield, housing the 40-watt, 48 in. lamp. Westinghouse Electric & Mfg. Co.



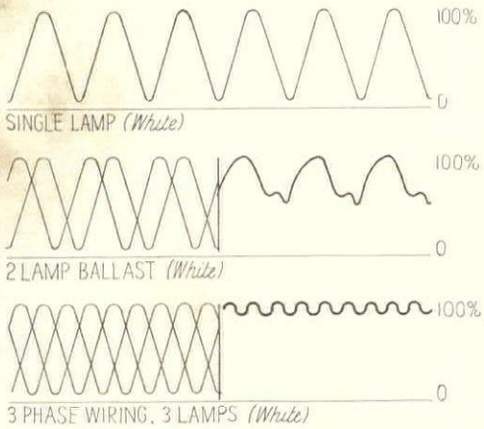


INDUSTRIAL use (left) of fluorescent lamps has been immediate and widespread. Photo shows Miralume units made by Hygrade Sylvania Corp.

CONTINUOUS trough lighting (above) is also favored for industrial purposes. Units are placed end to end and supported by continuous wireway.

STROBOSCOPIC EFFECT

All light sources burned on alternating current have a certain amount of stroboscopic effect or cyclical flicker due to the variations in the current. In fluorescent lamps this effect is much more apparent than in the wire filament type and may be noticed by passing a bright object quickly beneath the lamp, especially with the daylight type, which has less "carry over" than the white or soft white.

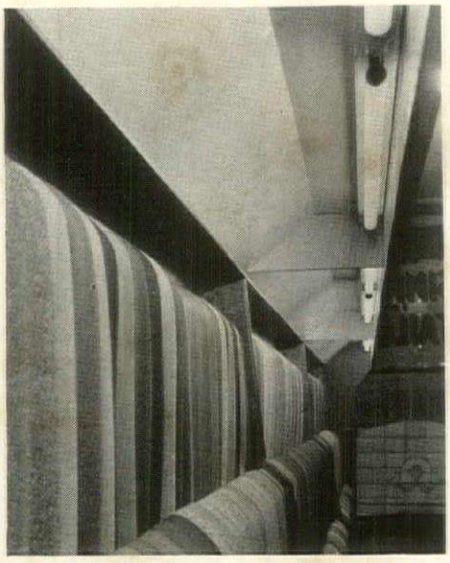


The graphs above show the relative stroboscopic effect of the white lamp when burned by itself, in pairs with a two-lamp ballast, and in a triple fixture with three-phase wiring. The first has 19 times as much flicker as a 200-watt incandescent lamp (about 3 times as much as a 40-watt incandescent), the second 9 times as much, and the third 3 times as much (less than half that of the 40-watt incandescent). Stroboscopic effect is especially important where moving objects are viewed or the eye itself is moving rapidly, it can and should be minimized through the use of paired lamps with the two-lamp ballast.

AUXILIARIES

Fluorescent lamps operate at ordinary line voltage with relatively simple auxiliary equipment, which takes up little space and requires no ventilation. It may be placed in the fixture housing or, if necessary, at a point remote from the lamp. Only two wires are required between the lamp and a remote auxiliary.

The equipment consists of two principal elements—an iron choke coil or ballast to control the arc current, and a starting switch automatically to preheat the electrodes. Switches are of three types: magnetic, thermal, and a new form of thermal switch called a "glow" switch that may be mounted in one of the lamp holders for easy replacement. All types now contain a condenser to eliminate radio interference. Separate ballasts and switches are required for each lamp, and ballasts must be designed for the particular size of lamp employed. A special two-lamp ballast is available which cuts down stroboscopic effect and corrects the power factor when used with paired lamps.

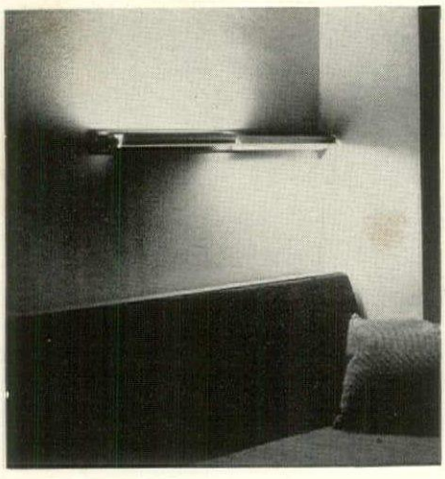


DAYLIGHT fluorescent lamps used to illuminate tailor's samples in their natural colors. Fixtures by Wiremold Co.

NOISE, TEMPERATURE

The ballasts used with fluorescent lamps produce a barely perceptible "transformer hum" which is accentuated if the vibration of the ballast is transferred to its support. Where a large number of lamps are employed, this hum may become audible unless the surrounding sound level is high enough to have a masking effect. Ballast noise may be minimized by employing ballasts of generous size in non-metallic cases, and by mounting the ballasts on a resilient support. For extremely quiet conditions, remote mounting of the auxiliary equipment may be necessary.

Fluorescent lamps operate at full efficiency only at normal room temperatures, and should be enclosed for use outdoors. Lamps in suitable enclosures produce 80 per cent of their rated light output in surroundings at zero temperature.



RESIDENTIAL applications of fluorescent lamps have so far been limited mostly to bathrooms and kitchens. Photo (left) shows an interesting use of the 30-watt, 36 in. lamp with snap-on reflectors for living room lighting. Henry N. Wright, designer.

THE ARCHITECTURAL FORUM

announces

POST-WAR PATTERN

a series of studies of the major problems which Building must meet in the post-war period. In developing this program the Editors will be advised by a panel of distinguished collaborators.

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SUBJECTS TO BE COVERED IN THE POST-WAR PATTERN ARTICLES

Building must work to a plan—each house to its neighbors, the neighborhood to its community, the community to its region and ultimately the regions to the nation.

It must adopt rational standardization to gain economies.

It must further integrate and enlarge operations to bring about a responsible leadership and a more intelligent collaboration of those who plan, those who build, those who finance, those who deal in land, and those who make and supply materials and equipment.

It must solve the problem of the really low cost house, not by producing a stripped down, compressed shell, but by affording complete modern living amenities at decreasing cost of purchase and maintenance or of rent.

It must remove every unnatural restraint practiced by any branch of Building. This purge must include obsolete codes and ideas quite as completely as illegal practices.

It must face the fact that Building continues low in public opinion, and carry out a large-scale program of constructing a new and favorable national concept of Building. Building must not only live right but must make sure the public knows it does.

It must expose the entire building process to intensive, broadminded research covering not only technology but thorough exploration of the major factors which will improve the quality of its services to the public and the stability of Building itself.

It must work for an effective control of land use. Zoning ordinances must be made adequate.

It must work for a rationalization of taxation to attract capital interested in a secure, reasonable return.

It must encourage the further study of planned public works as a means of shockproofing depressions and providing continuous employment of men, materials and money.

It must recognize that technological advances will come more rapidly in the future and it must therefore provide lower cost and more flexible buildings. The approach must gradually shift to the most modern standards attainable. Building must advocate what industry has long practiced—a willingness to depreciate structures before the period of physical obsolescence has been reached. The facilities, existing and to be created, recently described by the President as "Democracy's Arsenal," may be converted to constructive post-war use in this program.

It must rationalize its labor problem. Building labor needs a higher annual wage but a lower hourly rate. Plans which meet this objective and which eliminate jurisdictional strikes and similar costly restraints must be evolved. Opposition is great, but so would be the gains.

It must redefine its relations with Government. The present tendency of Government to absorb various building functions must be converted to a policy of effective collaboration between Government and private enterprise, and the creation of a national atmosphere in which private enterprise will reach its maximum useful capacity.

The first article of this series will appear in the August Issue of THE ARCHITECTURAL FORUM

HOUSES

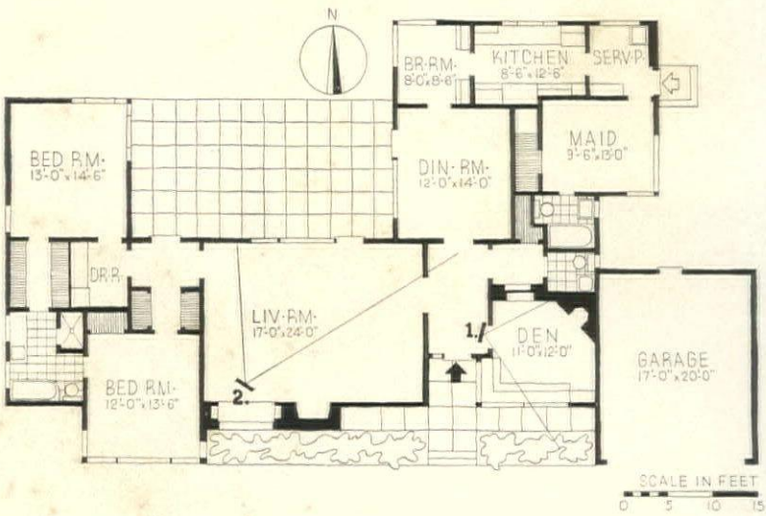
HOUSE IN ARCADIA, CALIF. THEODORE CRILEY, JR., ARCHITECT



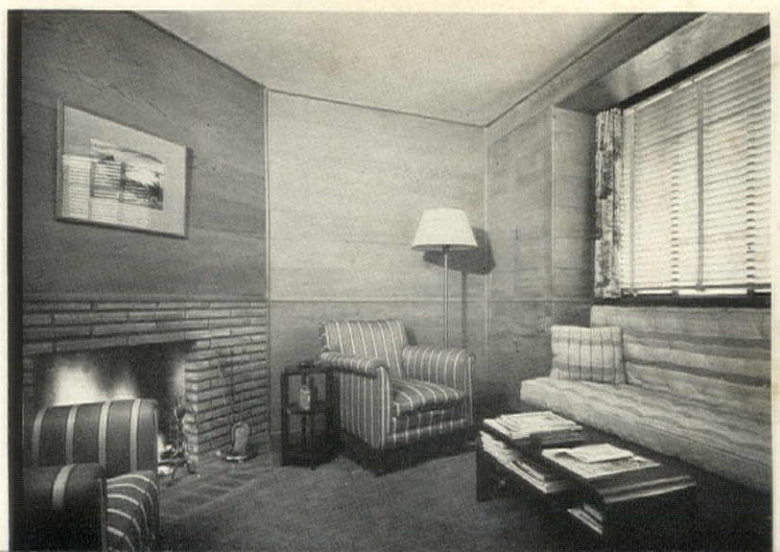


Fred R. Dapprich Photos

The one-story house illustrated belongs to a type fairly familiar in California and the Southwest. With the living room located midway between the bedrooms and service wing it is well arranged for convenient use, has a semi-enclosed rear court with most of the rooms oriented to the court or garden. The lines of the house are simple, the essential character being established by the low-pitched roof rather than the fenestration or wall treatment. Cost: $9,200. Cubage: 30,000.



VIEW 1.

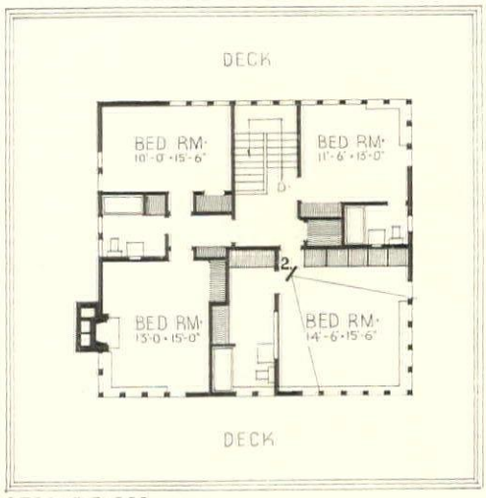


VIEW 2.

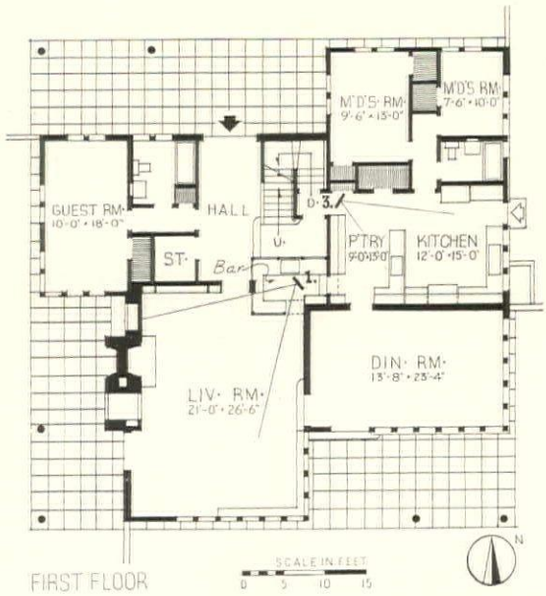


FIVE BEDROOMS, FOUR BATHS, TWO SERVANTS' ROOMS AND BATH, LARGE DECK



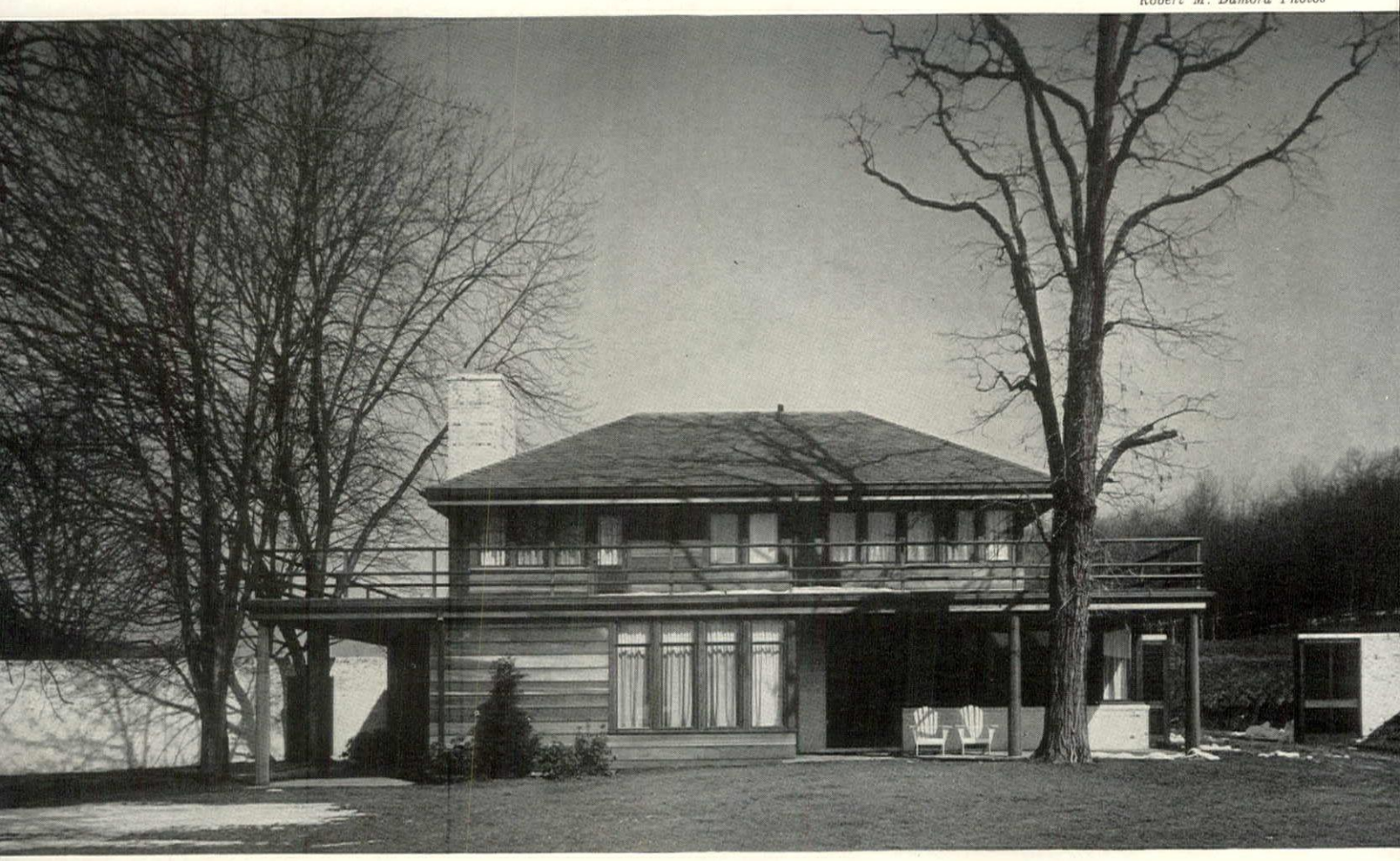


SECOND FLOOR

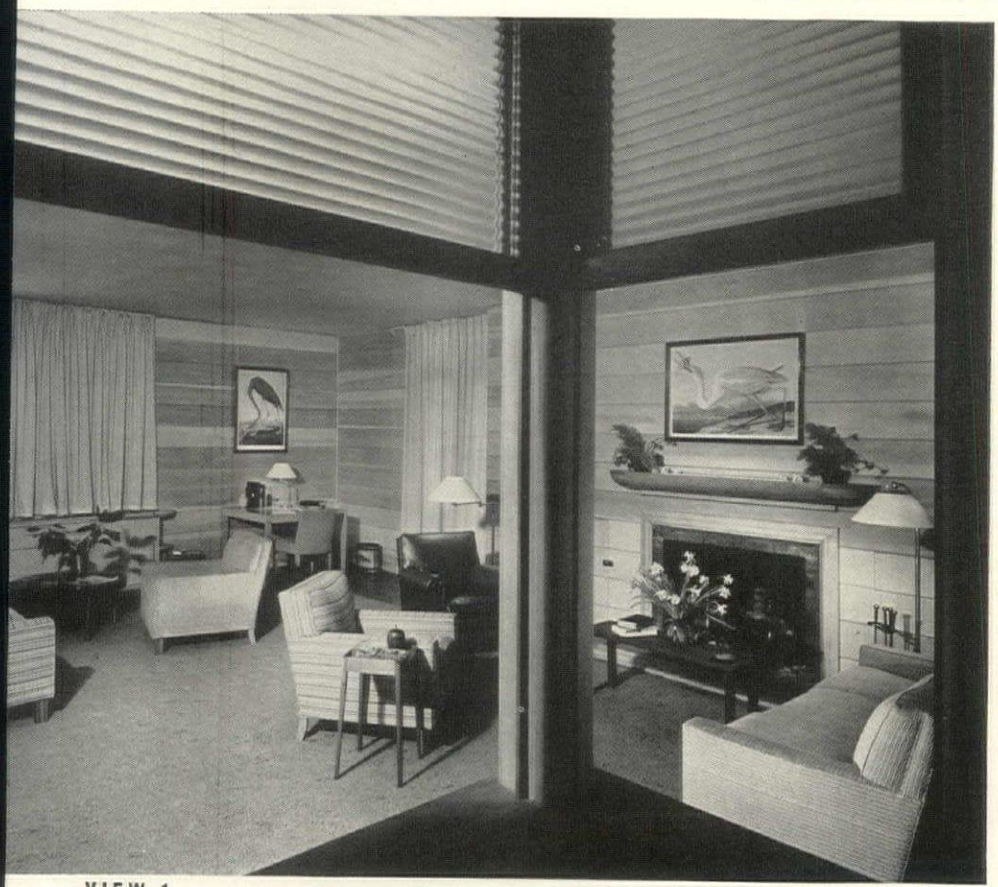


FIRST FLOOR

Robert M. Damora Photos



MIDDLETOWN, N. J. MICHAEL M. HARE, ARCHITECT, LIVINGSTONE ELDER, ASSOCIATE



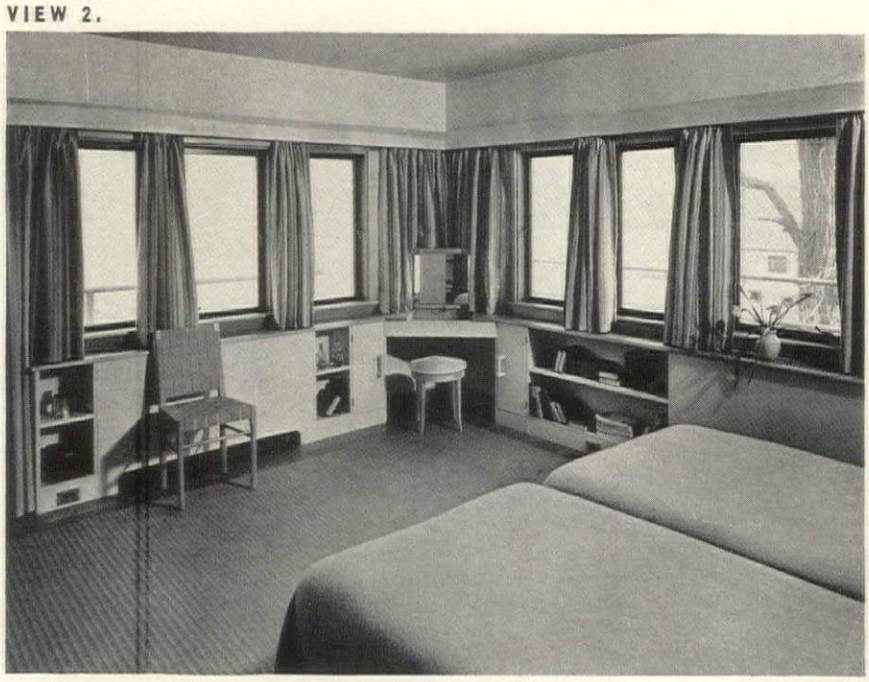
VIEW 1.

This house shows an unusual adaptation of the carpenter architecture of the early 1900's. The plan is practically square, with a deck that extends entirely around the upper floor, which is capped by a heavy hip roof. The first floor has three projections within the line of the deck, producing three sheltered terraces, one of which is equipped with an outdoor fireplace. In its general treatment the house is thoroughly modern, with a pleasantly solid appearance which stems from the use of wood supporting members. Room sizes are generous, with excellent provisions for light, air and view. Cubage: 63,758.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—framing, 8 in. brick, Calif. redwood siding, insulation; inside—rock lath and plaster, U. S. Gypsum Co.
ROOF: Covered with Bangor slate. Deck—covered with canvas.
INSULATION: Outside walls and attic floor—aluminum foil, Alfol Insulation Co., Inc.
WINDOWS: Sash—steel casements. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co.
FLOOR COVERINGS: Main rooms—oak. Kitchen — linoleum, Armstrong Cork Co. Bathrooms—linoleum and Goodyear Tire & Rubber Co. rubber flooring.
WALL COVERINGS: Living room and halls—clear pine. Bedrooms and kitchen—plaster.
KITCHEN EQUIPMENT: Range—General Electric Co. Refrigerator — Westinghouse Electric & Mfg. Co. Sink—Elkay Mfg. Co. Cabinets—Murphy Door Bed Co.
BATHROOM FIXTURES: By American Radiator-Standard Sanitary Corp.
HEATING: Two pipe vapor steam system. Boiler—Fitzgibbons Boiler Co. Radiators—American Radiator-Standard Sanitary Corp. Water heater—Taco Heaters, Inc.

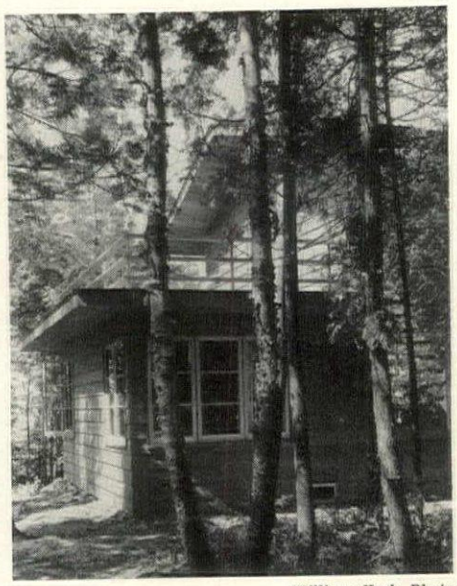
VIEW 2.



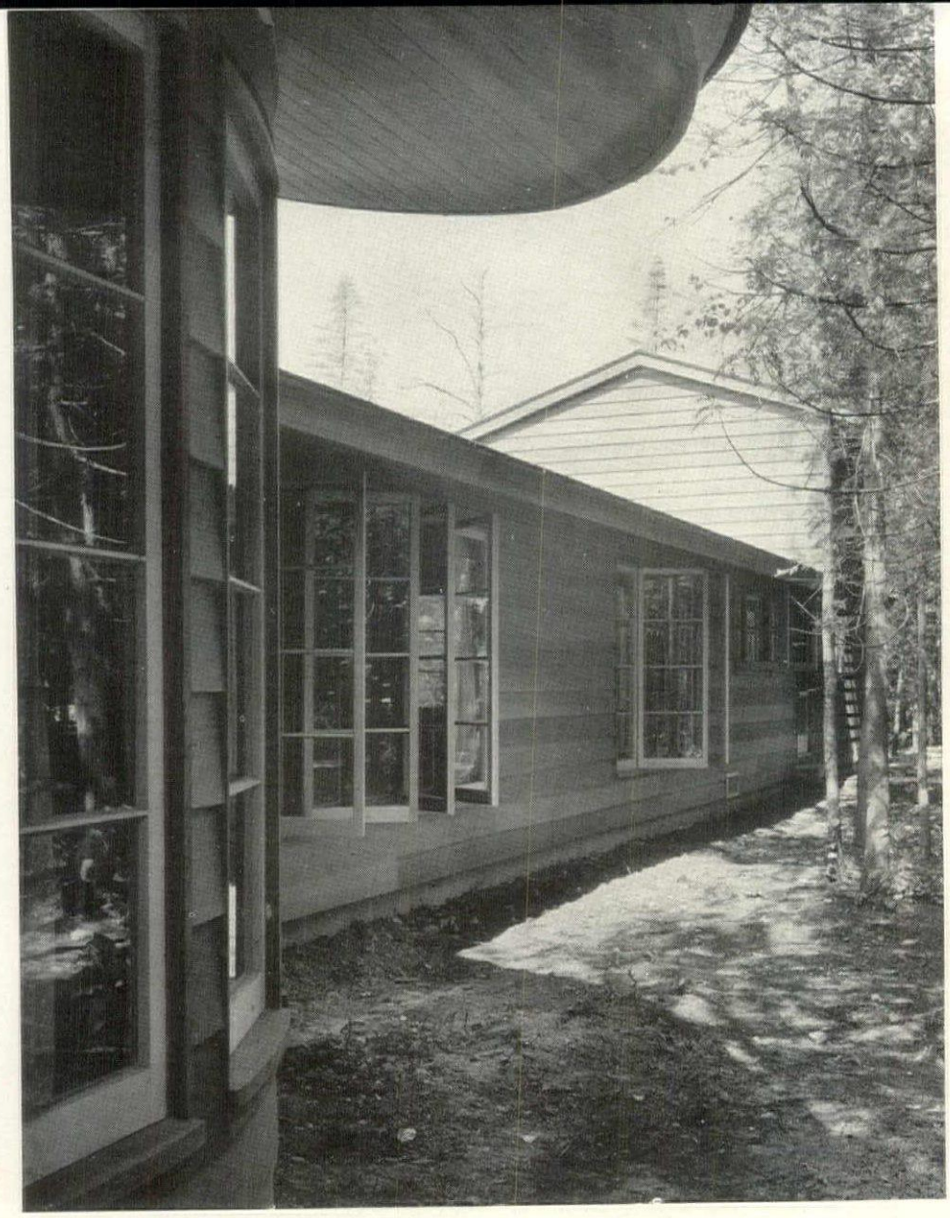
VIEW 3.



FOUR BEDROOMS, THREE



William Keck Photos



VIEW 1.



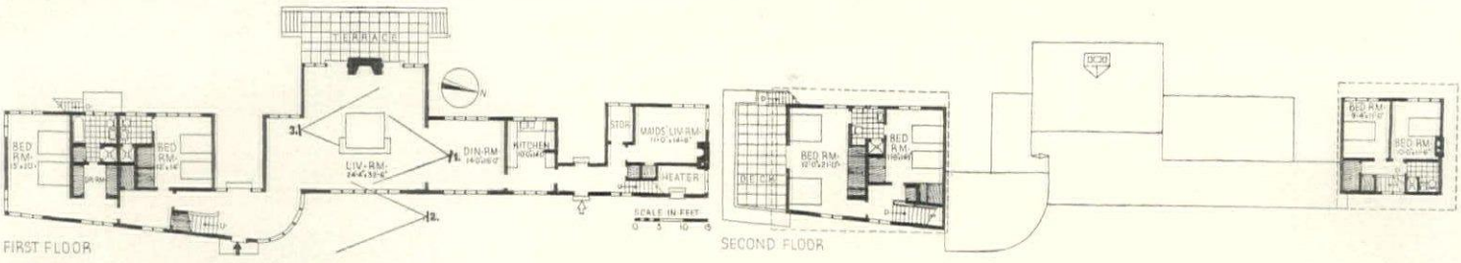
BATHS, SERVANTS' QUARTERS, FOR SUMMER USE



VIEW 2.

NORTHPORT, MICH.
GEORGE FRED KECK, ARCHITECT

The possibilities inherent in the summer house, if it is not considered as merely a stripped-down version of a year-round dwelling, are very pointedly demonstrated in this vacation house for the Michigan north woods. Logically, the plan is extended to its limits: there is no heating problem to disturb such an arrangement. The attenuated plan also gives the maximum possibilities for ventilation and provides an abundance of light and pleasant outlook. Placed nearly a hundred feet apart, the owner's and servants' sleeping rooms on the second floor have complete privacy; the walls which face each other here have been left blank. The interiors are appropriately casual, with chintz curtains and comfortable furniture set against backgrounds of natural wood. Cost: 33 cents per cubic foot.



VIEW 3.



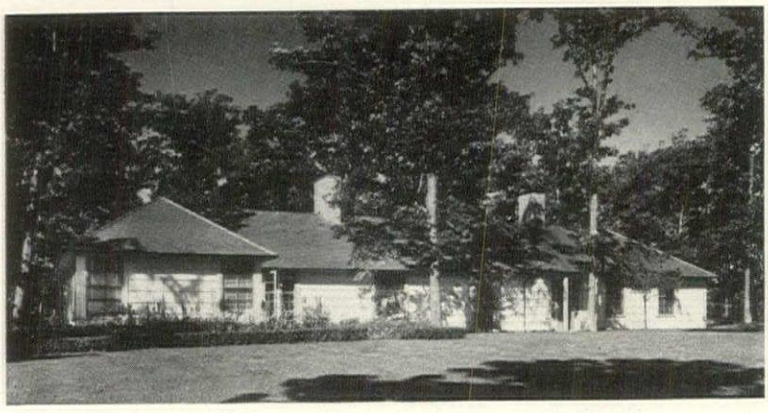
CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—redwood siding, building paper, sheathing; inside 2 x 4 in. studs, pine finish. Floor construction—oak finish.
ROOF: Covered with wood shingles. Deck—built up, slate surfaced felt finish.
FIREPLACE: Damper—Colonial Fireplace Co.
SHEET METAL WORK: Flashing galvanized iron, Toncan, Republic Steel Corp.
INSULATION: Roof—2 in. rockwool.
WINDOWS: Sash—wood, casement. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co.
FLOOR COVERINGS: Main rooms—oak. Kitchen and bathrooms—linoleum.
HARDWARE: By P. & F. Corbin and Oscar C. Rixson Co.
PAINTS: By Pratt & Lambert and Minwax Co.
ELECTRICAL INSTALLATION: Wiring system—BX. Circuit breaker—Square D Co.
KITCHEN EQUIPMENT: Range and refrigerator—General Electric Co.
BATHROOM EQUIPMENT: By Crane Co. Shower—Fiat Metal Mfg. Co., Inc.
PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—galvanized, Cop-R-Loy, Wheeling Steel Co. Pump—Crane Co.
HEATING: In bathrooms only, radiator on circulating hot water line. Water heater—oil fired, Williams Oil-O-Matic Heating Co.

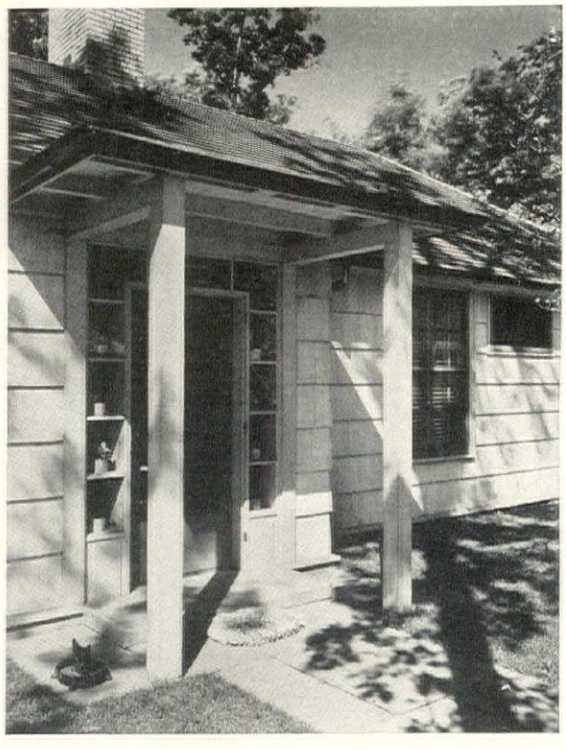
THREE BEDROOMS, THREE BATHS, TWO SERVANTS' ROOMS AND BATH

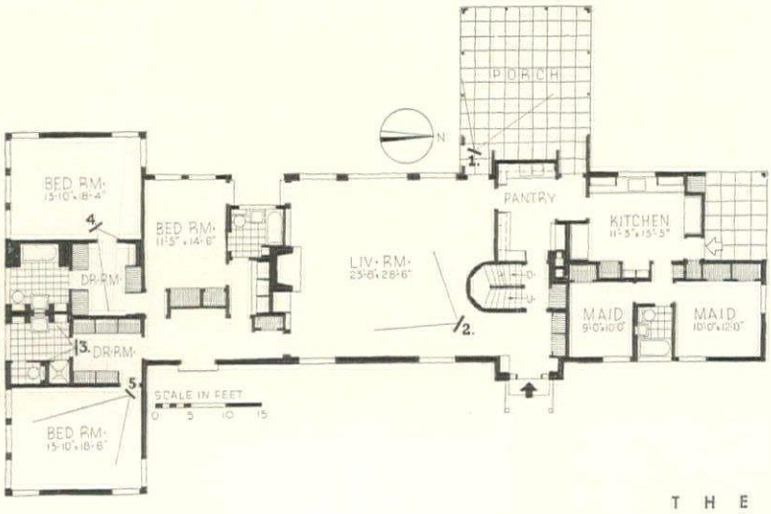


All photos, Hedrich-Blessing



ENTRANCE SIDE AND DETAIL

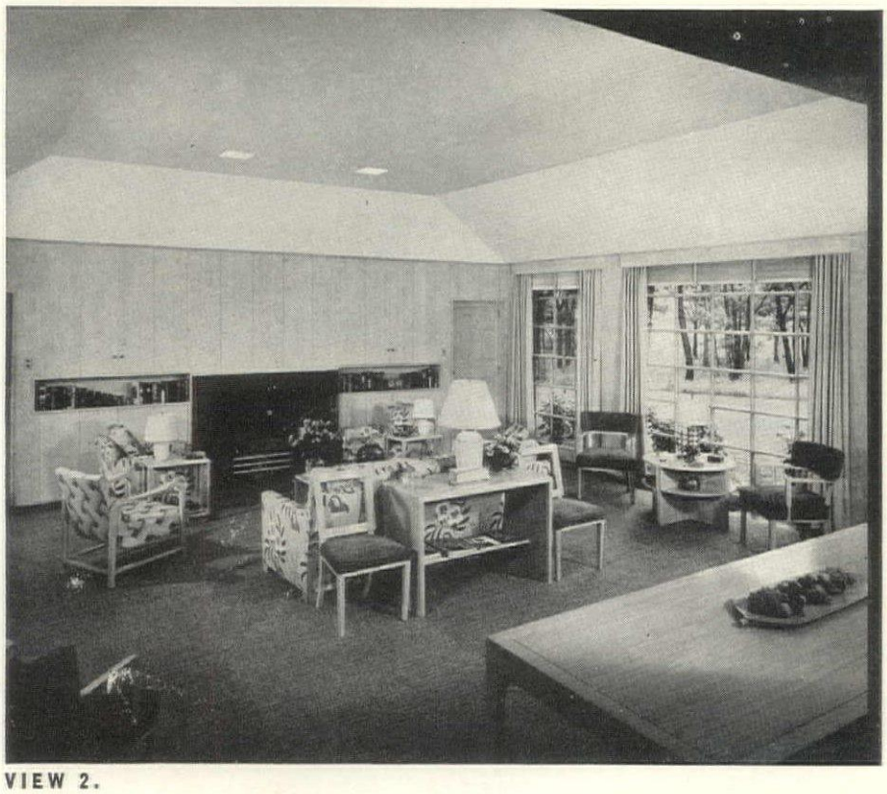




HIGHLAND PARK, ILL. ERNEST A. GRUNSFELD JR., ARCHITECT, WALLACE F. YERKES, ASSOCIATE



VIEW 1.



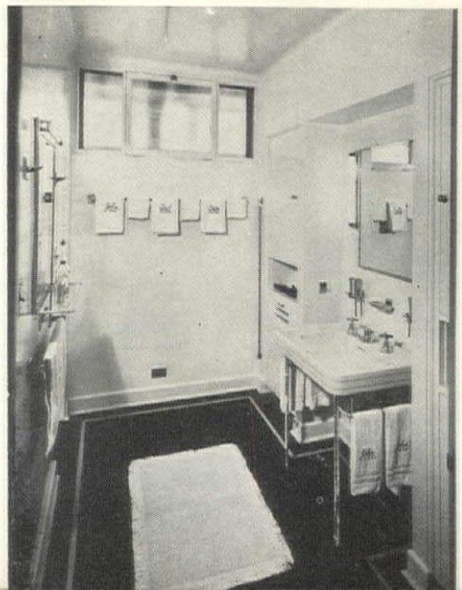
VIEW 2.

The plan shows a very generous living arrangement on one floor. As is customary in this type of house, the living room forms the link between sleeping and service quarters. The size of the house has made possible a secondary entrance to the bedroom wing, thereby eliminating the occasional inconvenience of using the living room as through circulation. It will be noted that in both of the large bedrooms there are no closets, all storage areas being located outside, in the dressing rooms. The exterior shows a consistent simplicity, a pleasing domestic character being achieved by the use of shingles and windows with comparatively small panes of glass. In many of the interiors the roof shape is reflected in the ceilings, whose increased height adds materially to the effect of spaciousness. Cost: 57 cents per cubic foot.

CONSTRUCTION OUTLINE

FOUNDATION: Concrete.
STRUCTURE: Exterior walls — zephyr shingles, Creo-Dipt Co., Inc., building paper, wood sheathing; inside—studs, metal lath and plaster; some rocklath, U. S. Gypsum Co., and wood paneling. Floor construction—wood joists, sub-floor, oak finish.
ROOF: Covered with shingles.
SHEET METAL WORK: Flashing, gutters and leaders—copper. Ducts—copper bearing iron.
INSULATION: Outside walls—Balsam Wool, Wood Conversion Co. Ceiling (1st.) — rockwool.
WINDOWS: Sash — wood. Glass — double strength, quality AA.
FLOOR COVERINGS: Main rooms—oak. Kitchen and bathrooms—linoleum.
WALL COVERINGS: Living room—knotty spruce. Bedrooms—one redwood; two wallpaper.
HARDWARE: By Yale & Towne Mfg. Co.
PAINTS: By Pratt & Lambert, Inc. and The Glidden Co.
ELECTRICAL INSTALLATION: Wiring system—rigid conduit. Switches—tumbler.
KITCHEN EQUIPMENT: Range—Hot Point, Edison General Electric Appliance Co., Inc. Refrigerator—Norge Corp. Fan—Ilg Electric Ventilating Co.
BATHROOM EQUIPMENT: By Crane Co.
PLUMBING: Hot and cold water pipes—Streamline copper, Mueller Brass Co.
HEATING: Warm air system, filtering and humidifying. Furnace — Waterman-Waterbury Co. Oil burner—Iron Fireman Mfg. Co. Thermostat and Humidifier — Minneapolis-Honeywell Regulator Co.

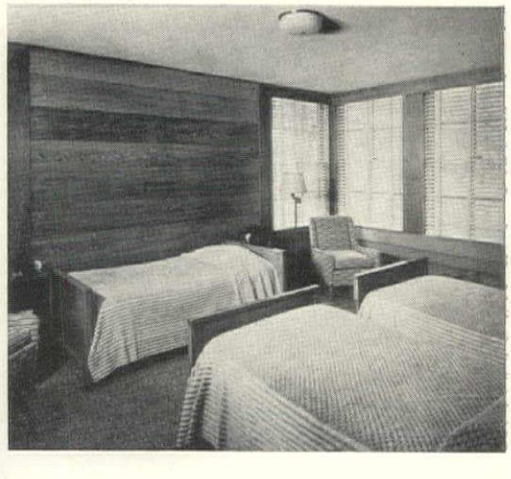
VIEW 3.



VIEW 4.



VIEW 5.



FIVE BEDROOMS, THREE BATHS





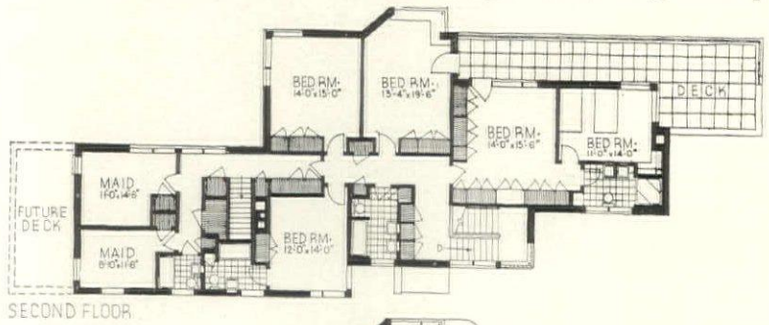


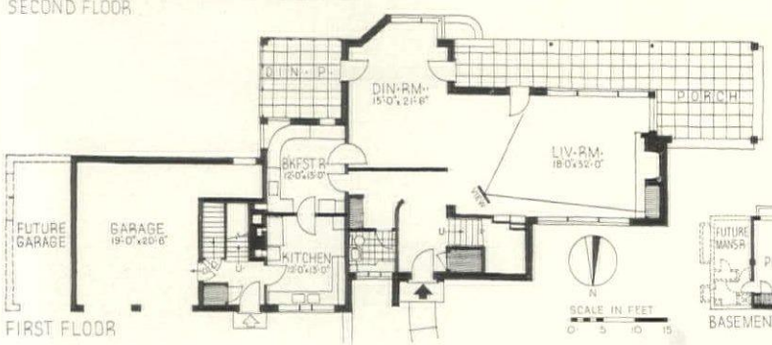
Times-Star Tower Photos

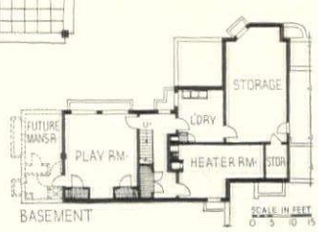
TWO SERVANTS' ROOMS AND BATH, RECREATION ROOM, 3-CAR GARAGE

CINCINNATI, OHIO HUBERT M. GARRIOTT & JOHN W. BECKER, ARCHITECTS

Size can be important in the design of a modern house, as the play of mass can replace to a considerable degree the interest normally provided by the conventional decorative features. If the somewhat complex plan of this house has not produced a dynamic composition, it does provide facilities for comfortable, even luxurious living as suggested by the interior view below. Some elements of the design do not explain themselves readily. The wall which cuts across the corner of the dining room and bedroom above offers no apparent advantages, and the deck enclosure, part open railing and part solid, seems equally indecisive. Among the more successful features of the house are the variety of outdoor living spaces and the excellent provisions for storage. Cost: 59½ cents per cubic foot.







CONSTRUCTION OUTLINE

FOUNDATION: Concrete. Waterproofing—Pozzolith, Master Builders Co.

STRUCTURE: Exterior walls—8 in. Straub cinder concrete units; wood furring strips, Stran-Steel Corp. metal and wood studs; inside—metal lath and plaster. Floor construction (1st.)—concrete ribs and metal pans; (2nd.)—bar joists, gypsum lumber, Haskelite Mfg. Co. wood block, linoleum, mastic tile finish.

ROOF: Covered with composition tar and gravel. Deck—covered with Maximent, Maximent Co.

INSULATION: Roof—4 in. rockwool.

WINDOWS: Sash—steel, Campbell Metal Window Div., Truscon Steel Co. Glass—double strength, quality A and plate. Glass blocks—Insulux, Owens-Illinois Glass Co.

WALL COVERINGS: Kitchen and bathrooms—Linowall, Armstrong Cork Co.

WOODWORK: Cabinets—poplar. Doors—"Sturdibilt," M. & M. Woodworking Co.

HARDWARE: By Schroder Hardware Co.

ELECTRICAL INSTALLATION: Wiring system—conduit and BX. Switches—tumbler, General Electric Co.

KITCHEN EQUIPMENT: Cabinets—Farley & Loetscher; Perma Sheen work tops, Tracy Mfg. Co. Ventilating fan—Victor Electric Products, Inc.

BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Cabinets—Miami Cabinet Div., Philip Carey Co.

HEATING: Hot water system. Boiler—Fitzgibbons Boiler Co., Inc. Oil burner—Williams Oil-O-Matic Heating Corp. Convectors—Modine Mfg. Co. Thermostat—Minneapolis-Honeywell Regulator Co.

LIVING ROOM



THREE BEDROOMS, TWO BATHS, MAID'S ROOM AND BATH, DINING ROOM

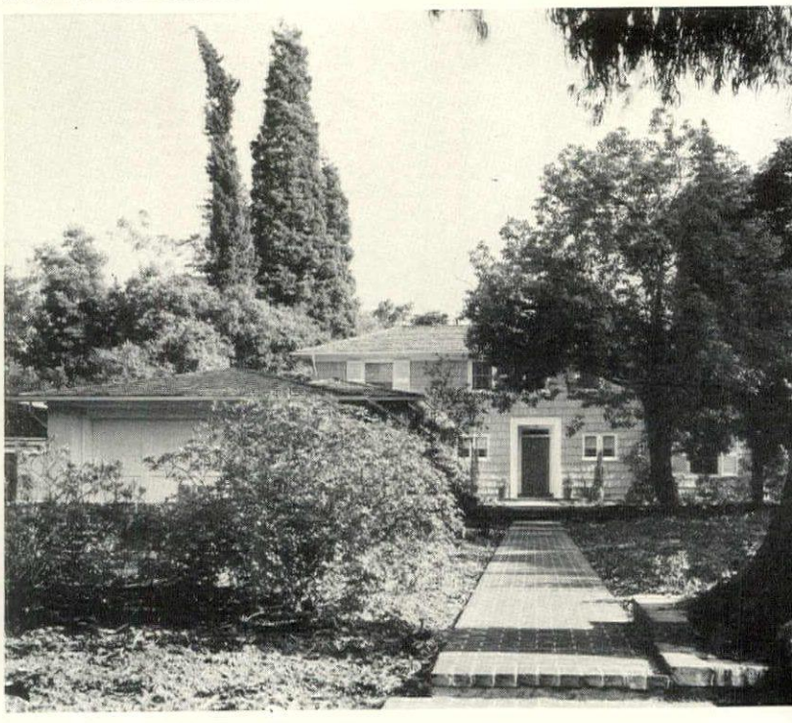


Miles Berné Photos

SOUTHEAST PORCH



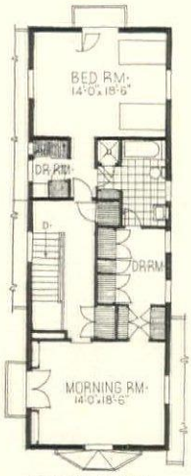
NORTH ELEVATION



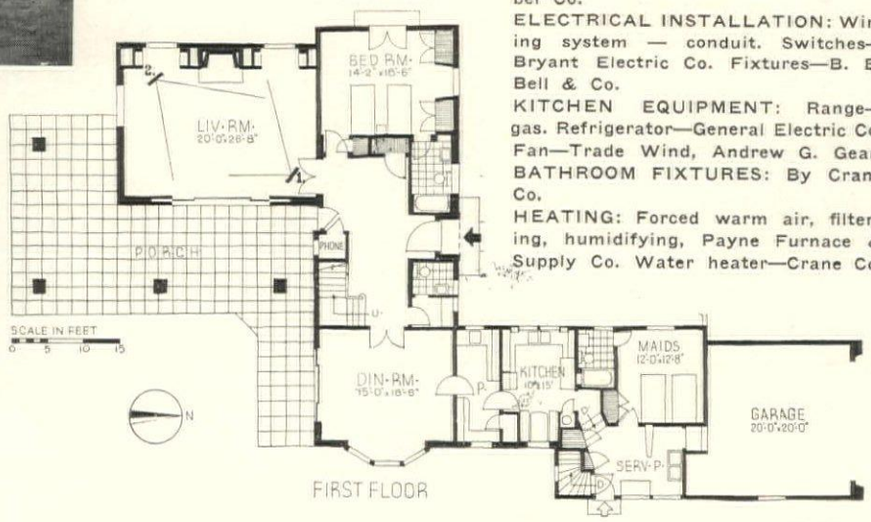
PASADENA, CALIF. WINCHTON LEAMON RISLEY, ARCHITECT



VIEW 1.



SECOND FLOOR



FIRST FLOOR

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—red cedar shakes, rocklath, U. S. Gypsum Co., plaster base; inside—metal lath and plaster.
ROOF: Covered with cedar shingles.
FIREPLACE: Damper—Superior Fireplace Co.
SHEET METAL WORK: Flashing, gutters and leaders—Armco galvanized iron, American Rolling Mill Co.
INSULATION: Outside walls—Johns-Manville Co. Attic floor—Fir-Tex Insulating Board Co. Weatherstripping—Chamberlin Metal Weather Strip Co.
WINDOWS: Sash—double hung, sugar pine. Glass—single strength, quality A, American Window Glass Co.
FLOOR COVERINGS: Main rooms—oak, carpet covered. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—rubber tile, Goodyear Tire & Rubber Co.
ELECTRICAL INSTALLATION: Wiring system — conduit. Switches—Bryant Electric Co. Fixtures—B. B. Bell & Co.
KITCHEN EQUIPMENT: Range—gas. Refrigerator—General Electric Co. Fan—Trade Wind, Andrew G. Gear.
BATHROOM FIXTURES: By Crane Co.
HEATING: Forced warm air, filtering, humidifying, Payne Furnace & Supply Co. Water heater—Crane Co.

The architect comments: "Both of the owners are enthusiastic gardeners, and their one 'must' was a home closely related to a well-organized garden, with easy access by porches, terraces and views. Florence Yoch and Lucile Council were the collaborating landscape architects. The owners also desired few rooms, but these were to be of generous size and with cross-ventilation."

The plan and photographs indicate the extent to which these instructions were followed. The Z-shape of the ground floor creates two main gardens front and rear, each protected by a wing; it also provides a desirable buffer between the house and street. Cost: 35 cents per cu. ft.

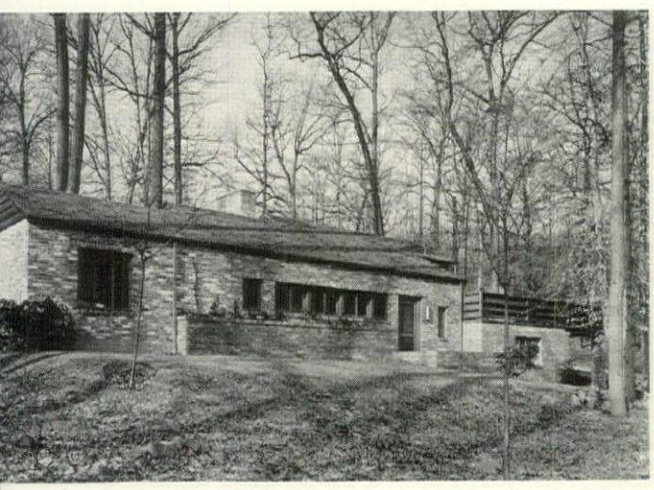
VIEW 2.



THREE BEDROOMS, TWO BATHS, RECREATION ROOM, CARPORT



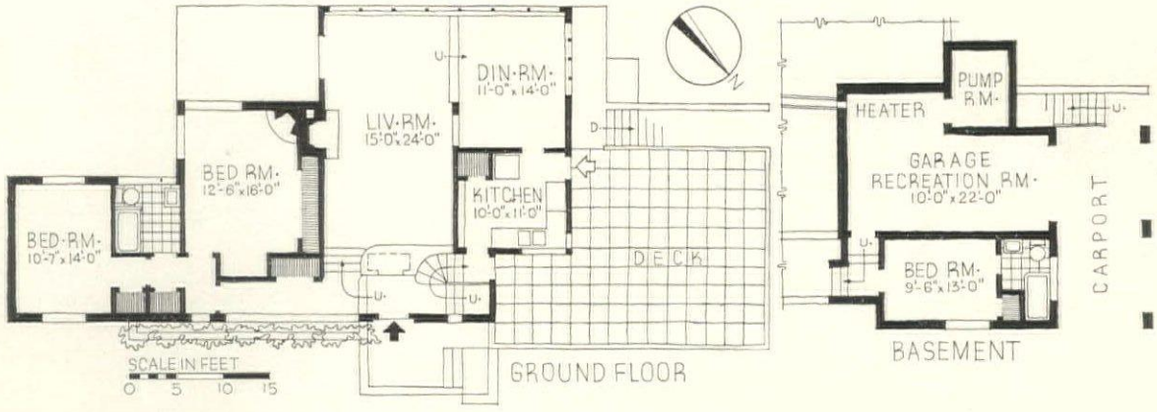
Orville K. Blake Photos





This informal design for a heavily wooded setting, while arranged with rooms on two levels, is essentially a one-story plan in which bedrooms and living areas are properly placed in well-separated compartments. The lower level contains a garage (used mainly as a recreation room), pump room and a third bedroom. The large deck above is ideally located for the use of small children, as their activities can be observed from the kitchen. Cost: about $11,300. Cubage: about 31,000.

BETHESDA, MD. FRANCIS PALMS, JR., DESIGNER



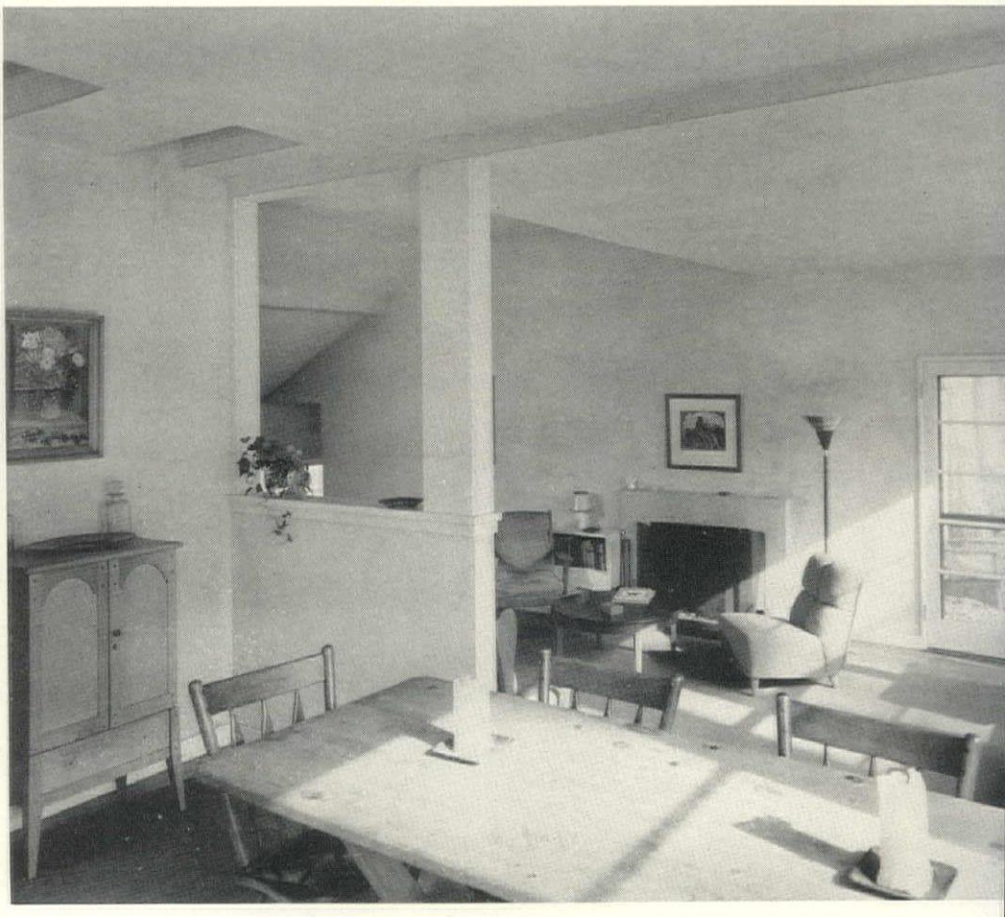


CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—redwood; lower floor and bedroom wing—brick, 1 in. back parge, 4 in. cinder block, 1 in. furring; inside—U. S. Gypsum Co. rock lath, foil backed, and plaster.
ROOF: Covered with Vermont slate. Deck—covered with Traffic Top, Celotex Corp.
INSULATION: Ceilings—Red Top strip wool, U. S. Gypsum Co. Weatherstripping—Chamberlin Metal Weather Strip Co.
WINDOWS: Sash and screens—steel casement, Hope's Windows, Inc. Glass—quality B, Pennvernon, Pittsburgh Plate Glass Co.
WOODWORK: Door casings—metal, Milcor Steel Corp. Doors—birch veneer and white pine. Garage doors—Ro-way, Rowe Mfg. Co.
KITCHEN EQUIPMENT: Range and refrigerator—Westinghouse Electric & Mfg. Co. Sink—Kohler Co. Garbage disposal unit—General Electric Co.
BATHROOM EQUIPMENT: Lavatory and tub—Kohler Co. Toilet—W. A. Case & Son Mfg Co. Shower—Speakman Co. Cabinets—F. H. Lawson Co.
PLUMBING: Hot and cold water pipes—Streamline brass, Mueller Brass Co. Pump—F. E. Myer & Bro. Co.
HEATING: Hot water radiation, two pipe system, ducts installed for auxiliary air conditioning. Boiler — Burnham Boiler Co.

LIVING-DINING





TWO STORY LIVING ROOM, THREE BEDROOMS, THREE BATHS, DEN

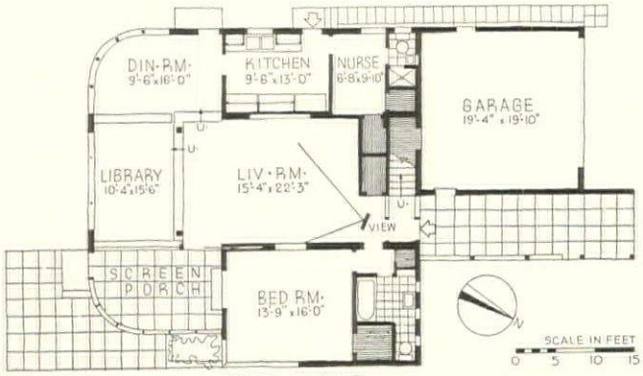


Ernest Graham Photos

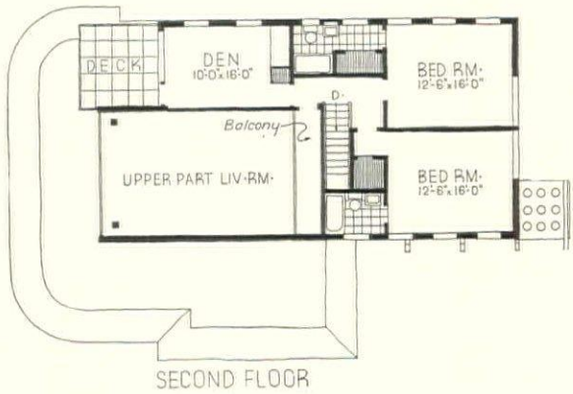
MIAMI BEACH, FLA.

POLEVITZKY & RUSSELL, ARCHITECTS

The high ceiling, traditionally a part of warm-country architecture, has been given dramatic expression here in the use of a full two stories for the living room. The open treatment extends horizontally as well, since dining room, library and screened porch are treated as part of the same space. Bedrooms are divided between the two floors, giving the flexibility so desirable. Additional living area is located on the second floor level: the den has a bar and an adjoining roof deck and could serve as an extra bedroom if necessary. Cost: $13,701. Cubage: 39,746.



FIRST FLOOR



SECOND FLOOR

LIVING ROOM



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—hollow concrete block; garage wall—smooth face lime brick. Interior partitions—rocklath, U. S. Gypsum Co., and plaster.

ROOF: Covered with asphalt, gravel topping. Deck—gravel roof with cypress slats.

SHEET METAL WORK: Flashing, gutters, leaders—copper. Termite strips—galv. iron.

INSULATION: Roof—rockwool, U. S. Gypsum Co. Weatherstripping — spring copper.

WINDOWS: Sash—Lemco steel, Lundell-Eckbert Mfg. Co. Glass—quality A, double strength, Pittsburgh Plate Glass Co. Reedex glass—Blue Ridge Glass Co.

FLOOR COVERINGS: Main rooms — clear white oak strip. Kitchen—linoleum, Congoleum-Nairn, Inc. Bath—tile, National Tile Co.

WOODWORK: Trim — magnolia. Interior doors—"Sturdibilt," M. & M. Woodworking Co.

HARDWARE: By Russell & Erwin Mfg. Co.

ELECTRICAL INSTALLATION: Wiring system—Sherodized steel tubing. Switches—General Electric Co. Fixtures—Lightolier Co. and H. A. Framburg & Co.

KITCHEN EQUIPMENT: Refrigerator—General Electric Co.

BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Cabinets—G. M. Ketcham Mfg. Corp.

PLUMBING: Hot and cold water pipes—Streamline copper, Mueller Brass Co.

HEATING: Thermador heaters in bedroom and bathroom, Thermador Electrical Mfg. Co. Water heater—Solar Water Heater Co.

HEADWAY AND HEADACHES

THE MONTH IN REVIEW

With construction of the nation's industrial and military defense plants well under way, recent newsworthy developments on the Building-for-Defense front have centered mainly around the housing problem and its solution:

► With the passage of Lanham Act II, another $150 million was added to the Federal defense housing kitty, and indication is that the dollars will be more wisely spent than previous funds, that more of them will wind up in the pockets of private architects (p. 424, col. 3).

► To provide temporary and mobile housing in particularly hot spots while the more permanent Lanham Act housing is being built, the President asked Congress for an additional $15 million with which to buy dormitories, trailers, an obsolete passenger boat and a new addition to the program—portable houses (p. 424, col. 3).

► Interpretation of this new term, "portable house," might well include the type of shelter recently devised by Inventor Buckminster Fuller—an adaptation of a cylindrical steel grain bin which Kansas City's Butler Manufacturing Co. has produced by the thousands during the past 40 years (p. 425, et seq.).

► Navy lessons notwithstanding, the Public Buildings Administration continued on its traditional way, dictated that 100 conventionally built houses go up in the New Albany, Ind., backyard of famed Prefabricator Foster Gunnison. (p. 424, col. 2).

► Prefabrication conscious, CIO's Construction Workers Organizing Committee announced that it had obtained a closed shop agreement with Lockwall Houses, Inc. covering the fabrication (in a Baltimore plant), delivery and assembly of 50 of the 650 houses now going up in the PBA's Indian Head "prefabrication demonstration project." And, CIOsters promise more to come.

► Meanwhile, private housing under FHA's new Title VI got rolling. Since the opening of the first Title VI house in Camden, N. J. (photograph, right), and the close of the program's first month, $30 million of defense mortgage insurance went under commitment (col. 3).

► Finally, and as significant for the postwar housing pattern as for current defense program, the so-called "Camden Plan" of home finance went into operation at a 500-unit Federal Works Agency project for Camden, N. J. shipyard workers. Developed by Col. Lawrence Westbrook, it boasts all of the advantages of owning and renting, none of the disadvantages (p. 443).

► On the industrial building front, news was made by the opening of the huge Radford, Va. ordnance works whose 597 buildings will boost U. S. powder production closer to the 300,000 lbs. per day goal (p. 432). Also newsworthy is the exterior design of the Industrial Tape Corp. plant which last month went into operation near New Brunswick, N. J. (p. 430).

TIME-BUYING CURB

When the Federal Reserve Board month ago announced that, in the interest of national defense, it planned to limit installment buying of consumer goods, the building industry immediately thought of FHA's 25-year home purchase plan, then took comfort in the Associated Press' interpretation of housing's position in the credit limitation proposal: "The experts view financing of new houses as the biggest problem after automobiles, but said that it was one that might be sidestepped. Although home construction may compete with defense needs for labor and materials, the experts credit it with important social benefits and note that in some areas the defense program itself is responsible for large new housing demands."

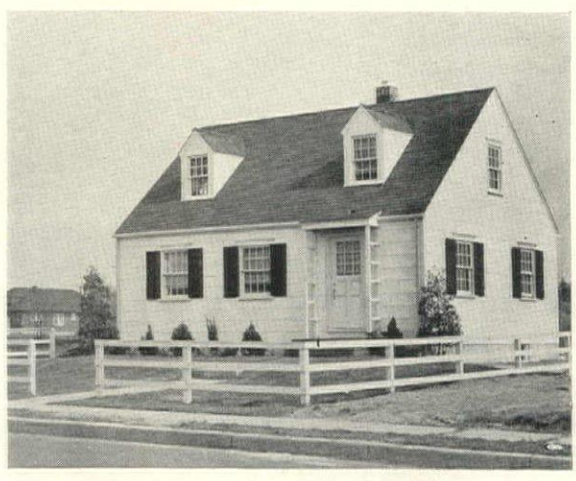
Purpose of the FRB's curb on time-buying is to stem inflation and conserve industrial resources for the defense program. The ups and downs of the general business curve are aggravated by the fact that in good times consumers buy more than they can afford on the installment plan and thus add to the business boom. In the bad times that follow they are so overloaded with financial burdens that they cannot afford to make their normal purchases which are necessary to restrain the downward business spiral.

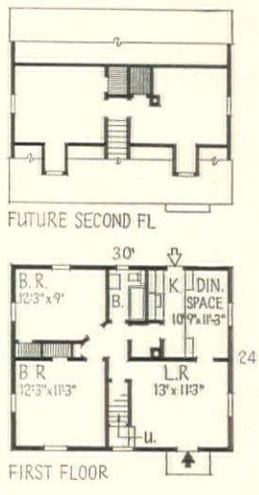
Indication is that if President Roosevelt, Price Administrator Leon Henderson and Congress approve, FRB will clamp down on the new and used car financing first; it accounts for about half of all U. S. installment buying. Down payments will probably be boosted, term of the loans shortened. Also due for tighter credit are purchases of refrigerators, radios, furniture and other comparatively expensive consumer items.

Proof that FHA officials are not contemplating tighter home financing credit is the National Housing Act Amendment submitted to Congress last month. It considerably loosens the strings on its Title I modernization and repair loan program (see p. 2, col. 1).

FHA's TITLE VI

When Congress two months ago gave FHA permission, via a new Title VI to the National Housing Act, to insure mortgages on houses built and owned by subdividers in designated defense areas, official prediction was that the $100 million of insurance





Title VI's first house is this $3,390 unit near Camden, N. J., strategically close to the local shipbuilding yards. Price includes a 50 x 125 ft. lot, two unfinished attic rooms. Originally designed for FHA mortgage insurance under Title II, the 44-house subdivision, called "Runnemede Ridge," was switched to the more lenient Title VI program in early April. Under the 25-year Title II plan, the down payment is $340, and monthly costs come to $26.19, including taxes and insurance. Under the 20-year Title VI plan with a $170 downpayment, they total $36.58 for the first three years, $31.48 for the fourth and fifth years and $27.28 thereafter. Possibility of no cash downpayments is not publicised by the project's developers, Charles R. Fish & Assoc., Inc.



Life—Wallace Kirkland

450 trailers were recently dispatched by Farm Security Administration to Nashville, Tenn., to house Vultee Aircraft plant employes while 300 "permanent" defense housing units are under construction, 300 more under consideration. The trailers cost $1,100 each, will rent for $25 per month, will move to another hot spot later on.

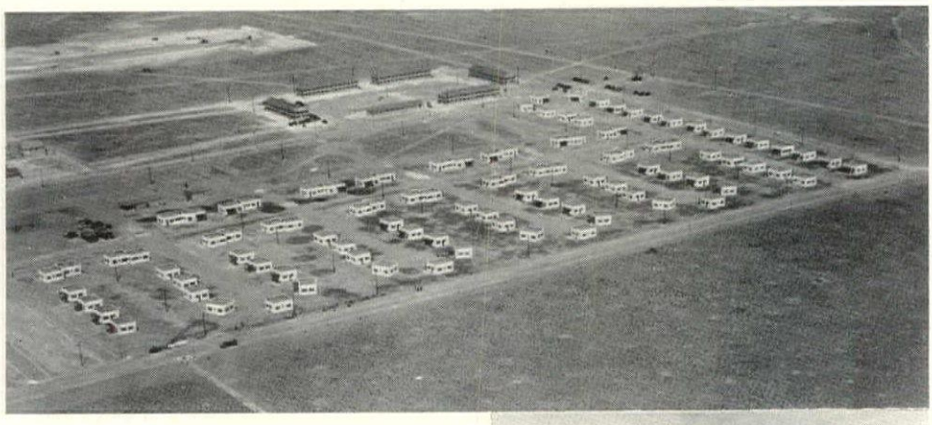
would be gobbled up in no time. However, the officials were over-optimistic; at the end of the program's first month there was still some $70 million of defense housing insurance on FHA's shelf.

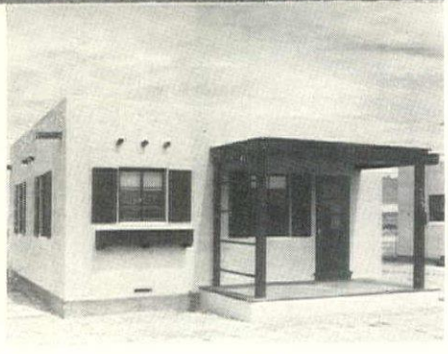
Now comes the official explanation: since detached defense houses may not be valued at more than $4,444—a price class in which but comparatively few experienced builders have heretofore operated—they have found it necessary to open up new subdivisions and develop new house designs. This in itself takes time, and then FHA's district offices must inspect and approve the subdivision location and layout as well as the individual house plans. With much of the ground work now accomplished, chances are that the FHA's defense program will roll faster.

CONTRACT OF THE MONTH

Far from the biggest but easily the most amusing of last month's large crop of defense contracts was that for $317,500 (plus $15,500 fee) which the Public Buildings Administration negotiated for the construction of 100 defense houses in New Albany, Ind. In this town is located the main office and fabricating plant of the Gunnison Housing Corp., one of the nation's first and biggest prefabricators. But, PBA ordered conventionally built houses from Contractor Leslie Colvin who lives and works in Indianapolis, 252 miles away.

On the basis of the contract, estimated cost of Colvin's houses will average $3,330 per unit, exclusive of land, site utilities, administrative expenses, etc. The project will consist of fourteen one-bedroom units, 54 two-bedroom units and 32 three-bedroom units. Back in 1938 Foster Gunnison put up twenty prefabricated two-bedroom units in a New Albany rental project at a cost of about $3,500 per unit, including utilities (ARCH. FORUM, Sept. 1938, p. 236).





White stuccoed houses with dark shutters near Albuquerque, N. M., municipal airport look as though they had been rolled from a dice box. Despite a wide expanse of land, Public Buildings Administration architects grouped the 100 box-like units closely together around a formal cul-de-sac street pattern, even combined 36 units in two-family buildings. The local Lembke Construction Co. finished the job on April 1 (after four months' work) at an "estimated" cost of $285,099 plus a $15,000 fee—$3,000 per unit exclusive of land, site utilities, administrative expenses, etc.

LANHAM ACT II

Giving another $150 million to the Federal Works Agency for 35,000 more defense housing units, Lanham Act II received Presidential approval at April's end. As predicted in the May FORUM (p. 340), the new legislation provides that no dwelling unit built in the continental U. S. may cost more than $3,950, exclusive of land, site utilities, administrative expenses, etc.—the same limit as carried by the original $150 million act. But, average cost for the program as a whole may not exceed $3,500 per unit—up $500. While the increase in this maximum was authorized to appease brick manufacturers, if pursued to the limit, it will mean about 7,000 less defense houses for the money.

Happily for the building industry and the defense program, indications are strong that Lanham Act II will be better administered than its forerunner. Thus, of the 10,755 dwelling units in the first batch of approvals under the new legislation, FWAdministrator John M. Carmody gave only 200 to the Public Buildings Administration for design and construction. Another 730 went to the U. S. Housing Authority which, as usual, will call upon local private architects and competitive bidding contractors for production. By far the biggest allotment—9,825—went to FWA, itself. This agency has creditably handled the production of its three Lanham Act I projects with the aid of private local architects.

Interestingly, most of the recently approved units will serve the families of private industrial defense workers (not Government employes and enlisted men) and 5,000 of them will be concentrated in Pittsburgh and its immediate vicinity.

TEMPORARY SHELTER

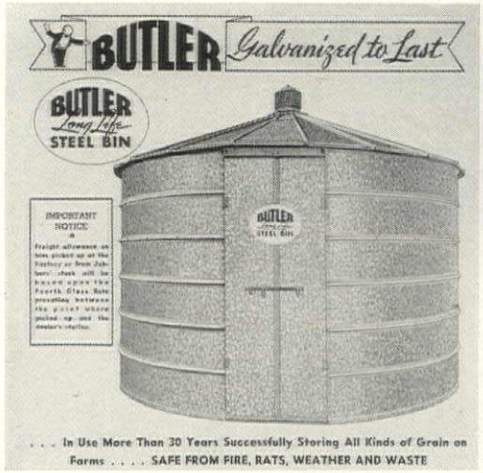
On April 22 the President approved temporary shelter projects of trailers and dormitories for six defense-busy communities, used up the last of his $5 million appropriation for this purpose. All told, he had 4,446 dormitory units under construction, 2,035 trailers on wheels (see photograph above) and 2,781 units and 1,809 trailers on order. Not surprising therefore was his plea to Congress a week later for a $15 million increase in his emergency shelter fund. Estimate is that the requested cash will buy 6,900 more dormitory units for single workers, 14,270 mobile dwelling units for married workers—small "portable" houses as well as trailers—and one obsolete passenger ship which will be converted into a floating dormitory. Earlier deals for the purchase and conversion of Hudson River boats have fallen through.

(Continued on page 50)

BUILDING FOR DEFENSE ... 1,000 HOUSES A DAY AT $1,200 EACH

promised by biggest sheet steel fabricator. Buckminster Fuller dresses up a grain bin, invents a trim three-room defense house, a six-man steel tent. The "Dymaxion" is totally demountable.

Ernest Weissmann





This spring Federal Works Administrator John M. Carmody, high mogul of defense construction, skeptically asked THE FORUM *to point to houses in the $2,000-$3,000 price range which are demountable (*ARCH. FORUM, *March 1941, p. 54-56). Herewith,* THE FORUM *presents such a house—priced not at $3,000, but less than half that amount; not 80 or 90 per cent demountable, but completely so.*

During the past two years, the Butler Manufacturing Co. sold the Government 36,000 steel grain bins like the one reproduced from a catalogue page above. Today, Butler stands ready to supply up to 1,000 steel houses a day like the one which went up in a Washington, D. C. trailer camp last month (right). A dressed-up adaptation of the lowly grain bin, the cylindrical dwelling is aimed at the defense housing market and hopes to make a bull's-eye by virtue of its complete demountability, its availability in quantities and its newsworthy price — $1,200 complete with utilities and furniture.

Inventor. Spark behind the metamorphosis which has taken place in Butler's Kansas City plant is Richard Buckminster Fuller, inventor-designer-writer of wide repute. A past master at astounding the public by altering sacredly traditional forms, Fuller has concentrated his inventions in the field of shelter, for Fuller believes that environment is "95 per cent a shelter problem." Most memorable are his Dymaxion house whose light walls and floors were suspended by steel guys from a central utility tower, his Dymaxion bathroom whose compactly integrated fixtures gave it the appearance of sculptured metal and his streamlined Dymaxion automobile whose motor was mounted at the rear of a three-wheeled chassis. More successful than any of these, a subsequent Fuller invention, his book entitled "Nine Chains to the Moon," has sold by the thousands. Besides discussing everything from Einstein's theories to death in its XLIV chapters, this book makes a score of startling technical prophecies, amply justifies the phrases which various writers have used to describe the rotund, little, white-haired man who is Richard Buckminster Fuller (see photograph, p. 381): "prophet of civilization" . . . "arch-theorist of housing" . . . "genius in a business suit" . . . "prefabrication's liveliest intelligence."

Through a car window one day last November Fuller noticed a number of Butler's bins on the Illinois countryside, immediately saw in them the basis for a solution to the defense housing problem of speed and low cost. Forthwith he visited Butler's Kansas City, Mo. plant, noted production methods and limitations, returned to his New York City home with an armful of catalogues and a brainful of ideas. A group of young friends was invited to help put the ideas on paper—notably Architect-Partners Walter Sanders and John Breck, Architect Ernest Weissman and Designer-Partners Rex Allen, Arthur Malsin and Edward Toole.

By year-end the preliminary presentation of his grain-bin house was ready for submission to Government officials and potential backers. Without committing themselves, Government housers looked kindly on the proposal, prompted Investor Robert Colgate to underwrite the cost of developing the house. (Since the design permitted Butler to use only existing dies and required no retooling, this development cost was comparatively small.) During the next three months, inventor, manufacturer and designers perfected and produced a full-size experimental model, demounted it, re-erected it, tested it and finally named it "Dymaxion Deployment Unit."

Embodying several improvements over the experimental unit, the second house last month was loaded in a railroad box car (with room for fourteen additional houses to spare) and shipped to Washington for official inspection. Freight charge: $14.

House. In six man-days two unskilled laborers earning 45 cents an hour stripped the crating off a half-dozen packages of tightly nested parts, completed their erec-



Ernest Weissmann

tion. First step is the dry laying of 350 bricks in a circle slightly larger than the 20 ft. diameter of the house. This ring is then filled with 5 cu. yds. of sand and leveled. Next, ten of the twenty body sheets—prefinished wall panels of corrugated 20 gauge steel—are set upon the brick "foundation," bolted together and to the prefabricated door buck.

Then comes the subfloor, comprised of the same corrugated steel sheets, but flat and precut to fit the 314 sq. ft. circular area. They rest on the sand, overlap the 2 in. curved return at the bottom of the body sheets. After all joints have been waterproofed with an asphaltic emulsion, the subfloor is covered with precut panels of ½ in. insulating board which, in turn, are covered with a ⅛ in. layer of hard surfaced composition board.

From here the laborers go back to the walls, erect the second tier of body sheets and raise the roof. The latter is comprised of 30 pie-shaped cover sheets to which curved eave pieces have been shop-welded. Three of them are bolted to the ventilator ring at the top and to the upper tier of body sheets at the bottom, thus providing a frame to which the other cover sheets are readily secured. Volume enclosed: 3,102 cu. ft.

With the shell complete, the interior



Arsene de Rosset

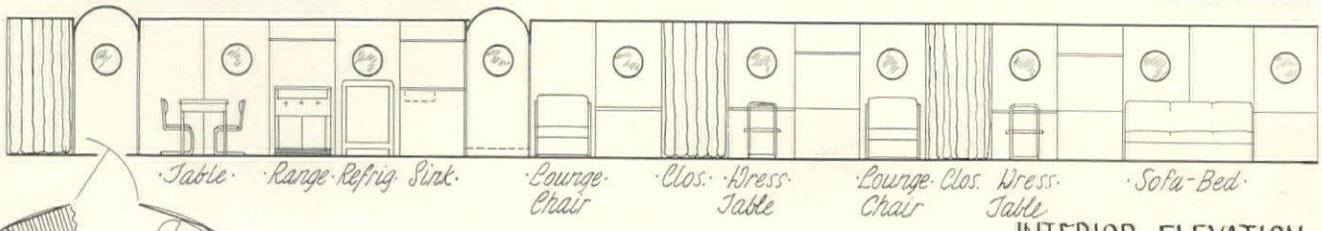
LIVING ROOM-KITCHEN



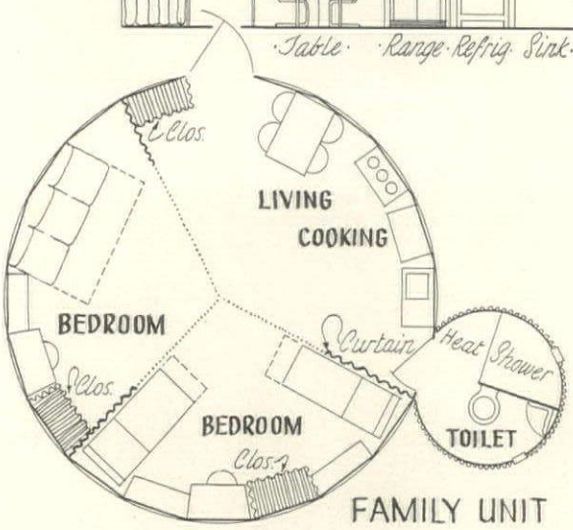
BEDROOM



Ernest Weissmann

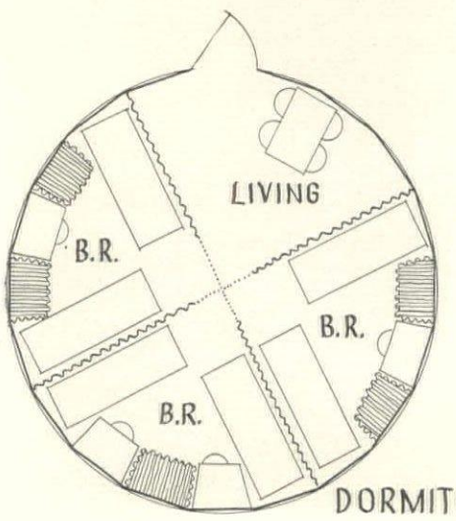


INTERIOR ELEVATION



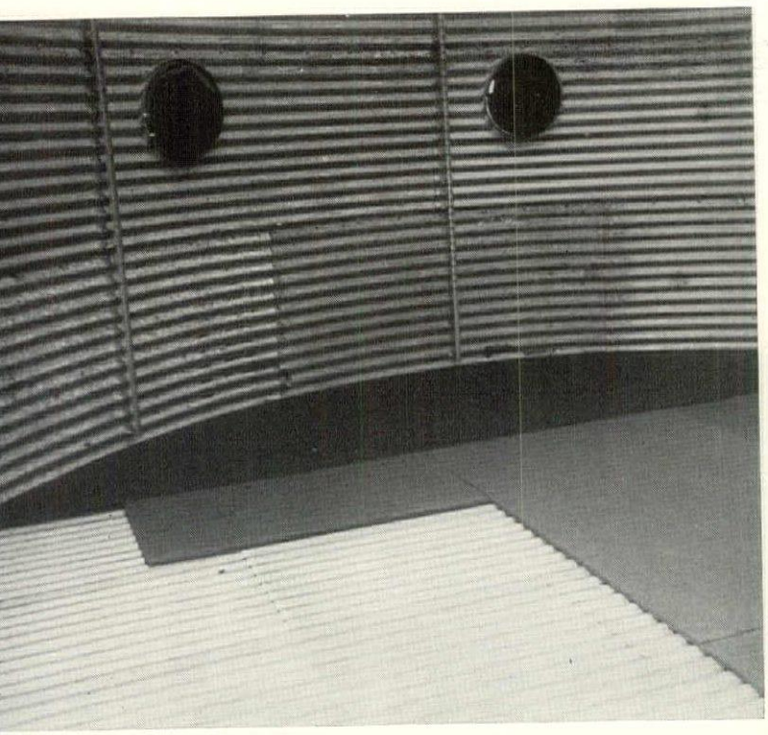
FAMILY UNIT

Since the Washington Demonstrator pictured above (through porthole windows) does not have the toilet appendage, the interior elevation, or stretchout, and the floor plan do not jibe. In the plan the kitchen equipment has been shifted, the sink being moved nearer the toilet appendage to concentrate plumbing lines. Including this equipment, the house contains eleven pieces of furniture—all supplied by Sears Roebuck & Co., at $200. Complementing it and included in the $1,000 cost of the house and toilet wing are twenty 12 in. and 18 in. steel shelves which may be hung anywhere on the vertical channel strips which hold the wall panels in place. Three shelves serve as the tops of curtained closets; others serve as wall tables and desks. Fixed roof lights are of reenforced plastic; movable wall portholes are glazed. In subsequent Dymaxions a continuous outlet strip will encircle the interior at the top of the wall panels, provide electricity for lighting and mechanical appliances.



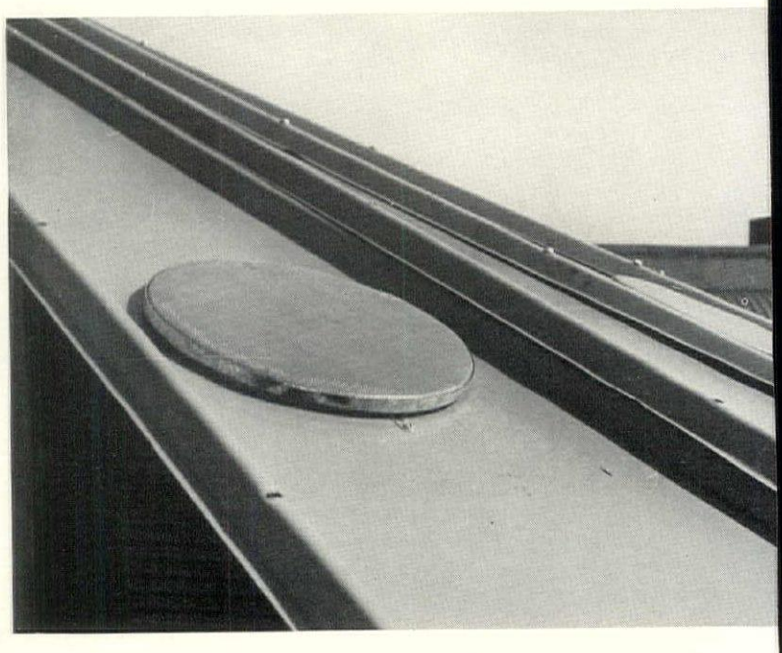
DORMITORY

By varying the furniture arrangement, Inventor Buckminster Fuller easily converts his Dymaxion Deployment Unit into a dormitory, or barracks, or steel tent. The deluxe model, shown to the left, provides a "living room" and abundant storage and counter space, sleeps six men. With some sacrifice of privacy, another bed or two could be squeezed in, and, if double-decker bunks were used, the same 20 ft. diameter unit might sleep up to sixteen men. In a project comprised of many of these dormitory units, community bathing and toilet facilities would be provided in full size Dymaxion shells. Interesting is the close parallel between Inventor Fuller's projected solution to the low cost house problem and that devised by Architect-Educator Martin Wagner (ARCH. FORUM, Feb. 1941, p. 87). But, Fuller's house was conceived before Wagner's theories were disclosed.



Floor is built up of 1) Butler Manufacturing Co.'s 20 gauge galvanized corrugated steel sheets precut to fit the circular 314 sq. ft. area and resting on the brick and sand foundation, 2) Masonite Corp.'s ½ in. wood fiber board, 3) Masonite Corp.'s ⅛ in. "Tempered Presdwood" panels as finish flooring.

Cover pieces are pie-shaped, interlock with watertight joints. Reenforced plastic "skylight" in alternate pieces is fixed, admits sun's ultra violet rays, but eliminates glare. Entrance hood is canvas stretched on a semicircular pipe frame whose design harmonizes with the window shields. Patents are pending on all of the Dymaxion's design and construction details.



Ernest Weissmann



Side walls are comprised of 1) Butler's 20 gauge steel panels or body sheets, 2) Masonite's panels of 1 in. insulating "Cellufoam," 3) Masonite's wallboard panels which are shop-finished with three coats of paint. Note "Cellufoam" held in place on ceiling by steel battens. Also, note brick terrace and front door louvers.

Stepladder, armful of tools and two common laborers built the Washington demonstrator in three days. Lumber in left foreground is crating in which came the Dymaxion's nested parts—1,800 lbs. of steel, 1,400 lbs. of Masonite. Furniture and equipment, including 358 lbs. of crating, weighs 1,075 lbs.; toilet appendage, 612 lbs. Total weight: 4,887 lbs. Floor area: 314 sq. ft. Volume: 3,102 cu. ft.



finishing operation begins with the fastening of 1 in. insulating board to the roof by means of steel battens. Insulated with the same material, the walls are finally covered with shop painted panels, of 3/16 in. composition board which are held fast by vertical channel strips bolted to the cover sheets.

Since it is still in the development stage, the cylindrical bathroom unit has not yet been added to the Washington demonstration model. It will contain a lavatory, a water closet, medicine cabinet, stall shower and a small heating plant, will open off the "kitchen." (See plan, p. 427.)

Critique. Because it is radically different from all other types of houses, the Dymaxion Deployment Unit is difficult to appraise with existing yardsticks. However, it does not take Inventor-Promoter Fuller to see several of its obvious and important advantages:

►Cost of the house (with the $200 bathroom) has been tentatively set at $1,000, and a complete suite of all-purpose furniture ups it to only $1,200. Covering freight, supervision and site labor costs, this price is for a single house erected in any part of the country. On quantity orders, it may be shaved to less than $1,000—a figure which no conventional house of comparable size and appointments can touch.

►The house is produced by an experienced 40-year-old manufacturing company, is available in previously unheard-of quantities. The largest general sheet steel fabricator in the country, Butler prefabricates grain bins, filling stations, diners, factory buildings, storage and truck tanks, barns and other farm buildings and equipment. Without impairing the production of these items, Butler claims that it can immediately turn out 320 Dymaxions a week, and, by concentrating the production facilities of its three Mid-Western plants on the job, could turn them out at the fabulous rate of 1,000 a day.

►Unlike anything else on the market, the Dymaxion house is completely demountable, 100 per cent salvageable—even down to the "foundations." Only 447 bolts hold it together.

►While its shape might not fit the public's traditional conception of "home," the unit is certainly attractive by all modern design standards; and those who have lived in the Washington demonstrator have vouched for its qualities of comfort and living efficiency. Unofficial tests indicate that it is adequately lighted, ventilated and insulated.

On the other side of the ledger are several limitations of the design which may create sales resistance on the part of both the public and Government. Thus, while the subdivision of the unit into three "rooms" by means of canvas curtains has the advantage of flexibility, privacy is sacrificed. And, the provision of more substantial fixed partitions would create permanently small, odd-shaped rooms and would boost the cost. Perhaps, further development of the house will lead to the provision of partitions which are both sound resistant and flexible.

A second important "con" is the fact that the unit is built primarily of steel—principal ingredient of national defense. While a steelman himself, Government's Priority Expert Edward Stettinius might well frown on the production of thousands of Dymaxion houses, each of which would contain 1,800 lbs. of precious steel. (The 1,400 lbs. of composition board is also a problem.) However, like many another defense expert, he might argue that, for the time being at least, material for the rapid housing of defense workers should have the right-of-way.

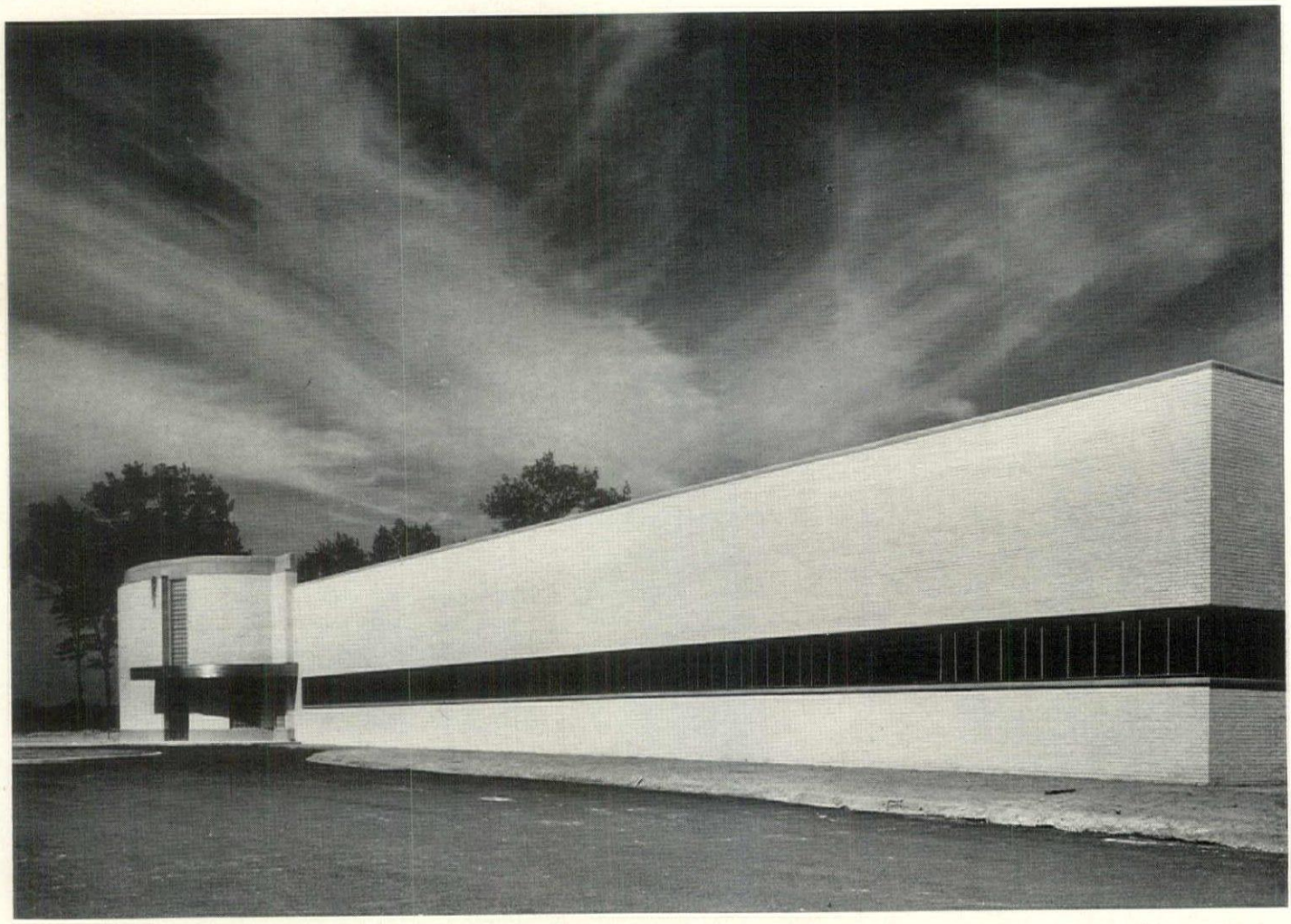
With the pros apparently outweighing the cons, indications were strong last month that a Government order was forthcoming, that Butler Manufacturing Co. would soon go into volume production of Buckminster Fuller's invention — either houses for defense worker families or dormitories for troops and single workers and, perhaps, both. In any event, Inventor Fuller has proved that presently accepted housing forms and "minimum" costs are still subject to revision.

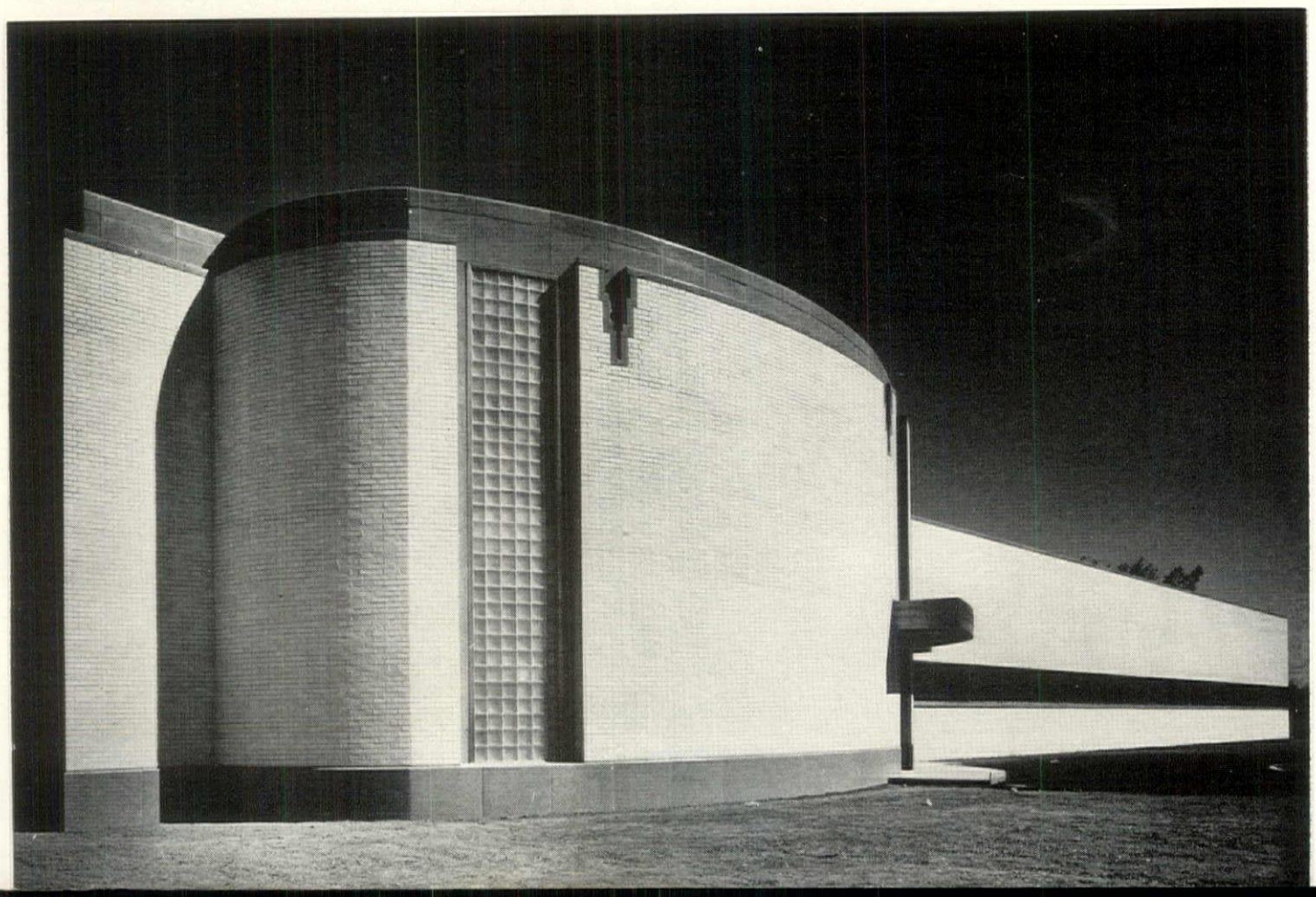


Ernest Weissmann

BUILDING FOR DEFENSE ... AN INDUSTRIAL COMMUNITY

features a tape plant of modern design. Johnson & Johnson subsidiaries build three factories in the woods as an air raid and explosion precaution.





Back in 1928 a Detroit drug store ordered a suspiciously large quantity of surgical adhesive tape, prompted Manufacturers Johnson & Johnson to investigate. To their surprise and joy they discovered that the automobile industry was using the comparatively costly material to mask off one section of a car while another section was spray-painted a different color. Hence, the organization of J & J's subsidiary, Industrial Tape Corp.

During peacetime, use of industrial tape —cloth-, paper-, and cellophane-backed— spread widely. It now appears in dozens of places ranging from the architects' drafting boards, as a competitor of thumb tacks, to the hatches of ships, as seals during the fumigation of holds. Then came the defense program and a rapid expansion of industrial tape's wartime uses: in the manufacturing, painting and packing of airplanes, in parachutes and in gas masks. Latest step in this cause-to-effect sequence was the opening last month of a new Industrial Tape Corp. plant.

Modern in architecture and equipment the new plant is one of three in J & J's decentralized industrial community located on a tract of wooded farm land a few miles from J & J's main factories at New Brunswick, N. J. (The other two new units manufacture medical supplies.) Widely spaced from its sister factories, the tape plant with its small strip windows (17 per cent of wall area) and its efficient ventilating and artificial lighting systems is obviously designed for air raid protection.

Moreover, tape manufacture itself is a dangerous process—another reason for the isolation of the building. When the solvent used in the process evaporates, the air takes on a highly antiseptic flavor and may explode when the atmosphere becomes highly charged. To minimize this danger, air in the plant is kept moving with blowers, machinery is carefully grounded to discourage static electrical sparks, and special wiring and fluorescent lighting devices are used. Finally, although visitors are not allowed to smoke, they are closely followed by employes toting fire extinguishers.

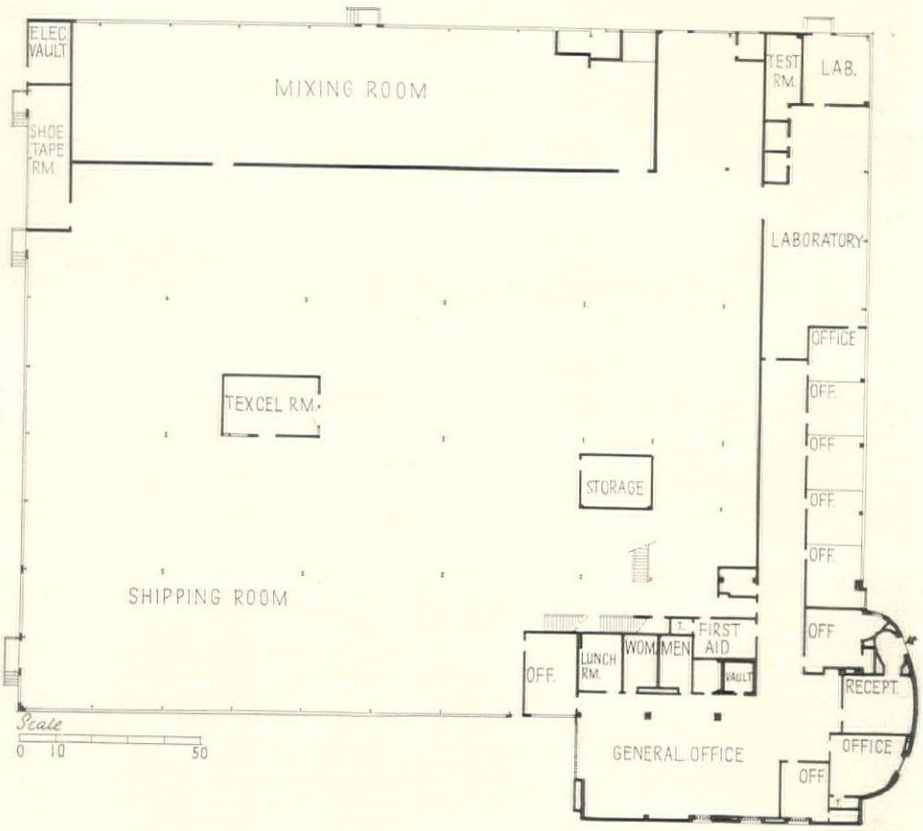
Besides a modern, efficient plant, the new building is an attractive advertisement for Industrial Tape Corp. of which Architects R. G. & W. M. Cory, Contractor Rule Construction & Repair Co. and Parents Johnson & Johnson may well be proud.

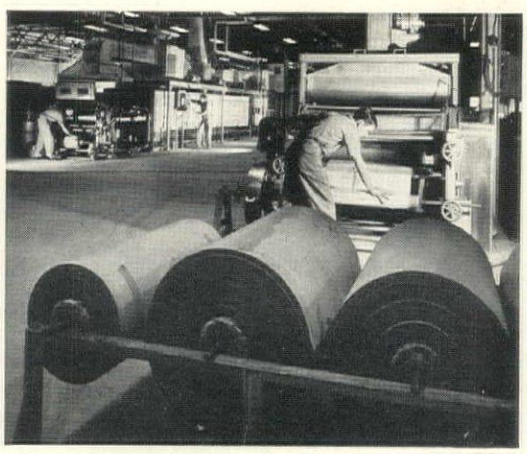
Exterior design of the plant shows horizontal emphasis achieved by the long strip windows which appear dark against the white walls. Entrance and office wing are set off by vertical panels of glass block. Design simplicity was not however, brought indoors, for office interiors are more Colonial than Modern.

Construction: concrete foundations and floors; glazed structural tile side and rear walls and interior walls; face brick front wall; continuous steel sash; steel trusses on 38 x 35 ft. bays; wood roof. Dimensions: 204 x 178 ft. Area: 58,456 sq. ft. Volume: 1,048,355 cu. ft. Clear height: 14 ft. Total height: 22½ ft.



Robert Yarnell Richie Photos

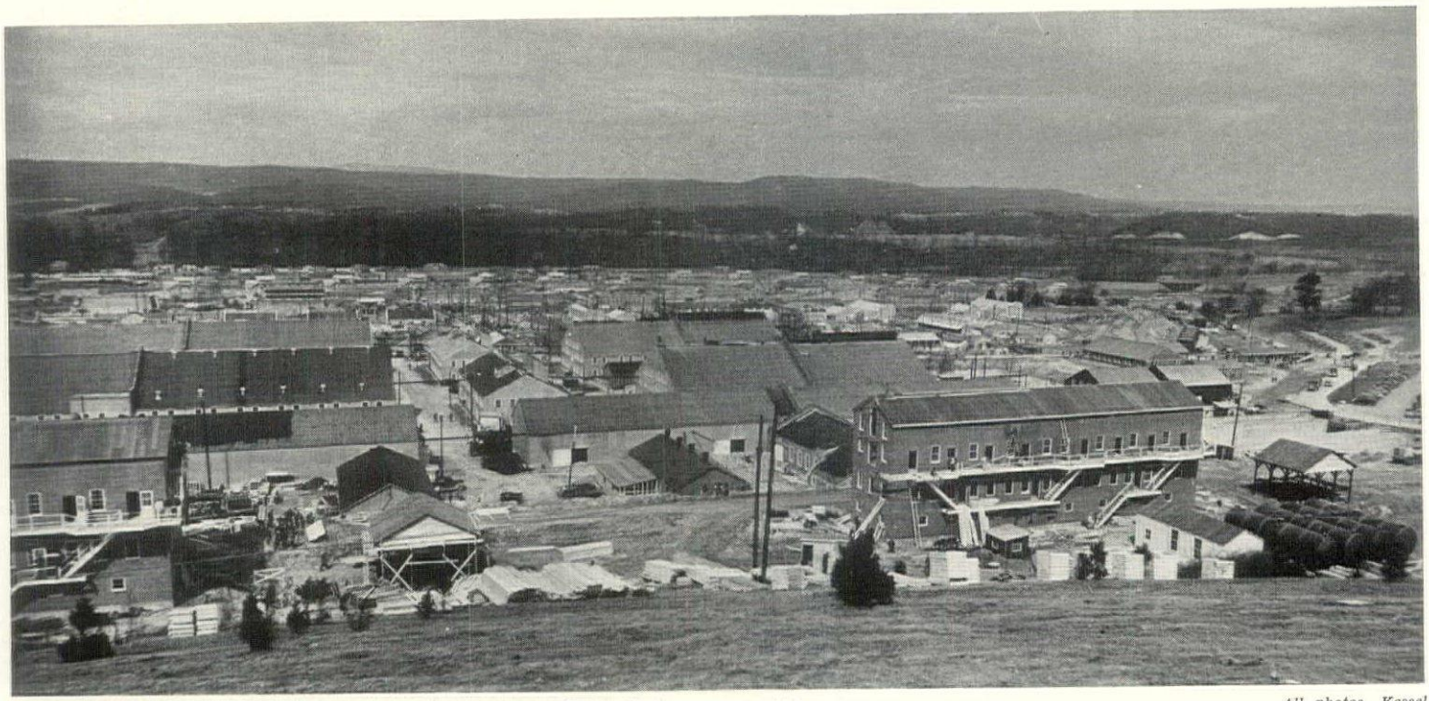




Industrial tape comes from the plant's machinery in strips as wide as 40 in., is rolled up for delivery. Windows in the building are used primarily to light the office and laboratory space. The shop is lighted by fluorescent fixtures containing two 40-watt tubes. Note ventilating equipment over the machinery to remove the fumes which rise with evaporation of the solvent. Fumes are explosive, but are not particularly objectionable in odor. They give the air an antiseptic flavor.

BUILDING FOR DEFENSE . . . POWDER AHEAD OF SCHEDULE

with the completion in seven months of the first unit in the Army's 1,200,000-pound-a-day smokeless powder program. Four thousand four hundred Radford, Va., acres become a focal point of the Arsenal for Democracy.



Nitrocotton area, where preliminary, non-explosive stages of manufacture are carried on.

All photos, Kessel

Early last fall, when a still-unexplained explosion wiped out the smokeless powder plant of the Hercules Powder Co. at Kenvil, N. J., supply of this vital defense essential touched bottom. World War plants, including the Government's $90 million investment at Old Hickory, Tenn., had long since been abandoned and scrapped. Peacetime orders to private manufacturers had been reduced to a mere trickle, with the Kenvil plant supplying a major part of the demand. Had an enemy chosen this particular moment to attempt an invasion of the U. S., productive capacity, once reserves were exhausted, would have barely sufficed to keep an army of 100,000 in the field.

The physical effects of the Kenvil explosion were not felt 500 miles to the southwest at Radford, Va., but its moral effects were. For Radford had been picked for the Army's first effort to assure an adequate supply of "propellent" explosives, and steamshovels had just begun biting into the Virginia dirt to make way for two powder production lines with a capacity of 200,000 pounds per day. The first effect of the Kenvil disaster was to redouble the urgency of completing the work already under way. A second effect was to underscore the need for improved safety precautions to prevent the spread of an explosion from one part of the plant to another—a factor almost entirely dependent upon good plant layout and appropriate building design. Finally, the projected capacity of the new plant was increased by one third. On top of an already stiff construction schedule, these three new factors added up to a distinct challenge to the ingenuity of those responsible for the construction of the new plant.

Organization of projects like the Radford Ordnance Works was worked out long before legislative recognition of the defense emergency, in the War Department's M-day plan. Army engineers prepared schematic site plans and detailed working drawings for the needed buildings, kept their designs up to date with periodic revisions in line with improved construction and manufacturing techniques. Lists of qualified builders and firms capable of operating such plants for the Government were on hand for use at a moment's notice. Advantages and disadvantages of various locations had been weighed in the light of factors such as proximity to raw materials, strategic considerations, and availability of local labor.

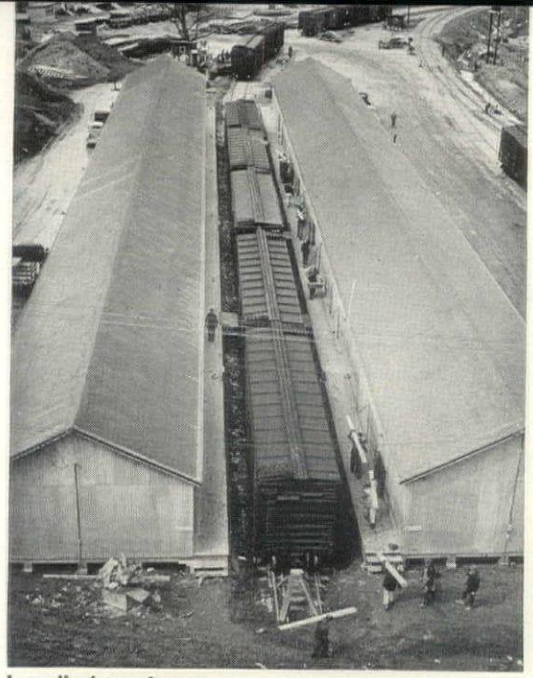
Once Congress had given the go-ahead signal, construction of the Radford plant was mostly a matter of carrying out a preplanned routine. General contractors Mason & Hanger, of New York City were selected to handle the construction work, under the supervision of Army engineers and the Hercules Powder Co., which had been chosen to operate the plant for the Government on a fixed-fee basis. Work was begun at once, with design changes based on the lessons of the Kenvil explosion proceeding simultaneously with preliminary stages of construction. By mid-winter, more than 20,000 building workers were busy at the job of transforming 40 Virginia farms and two cemeteries into one of the largest and most modern ordnance plants in the world.

Design of a powder plant is based on entirely different principles than obtain in most other types of industrial work. In place of the general tendency to collect all stages of a manufacturing plant under a single roof, powder manufacturing substitutes the principle of *dispersion*: first in order to minimize danger to employes, and second to confine property damage resulting from an explosion to as small an area as possible. The Radford works consists of 579 separate buildings, of which 353 are used for manufacturing.

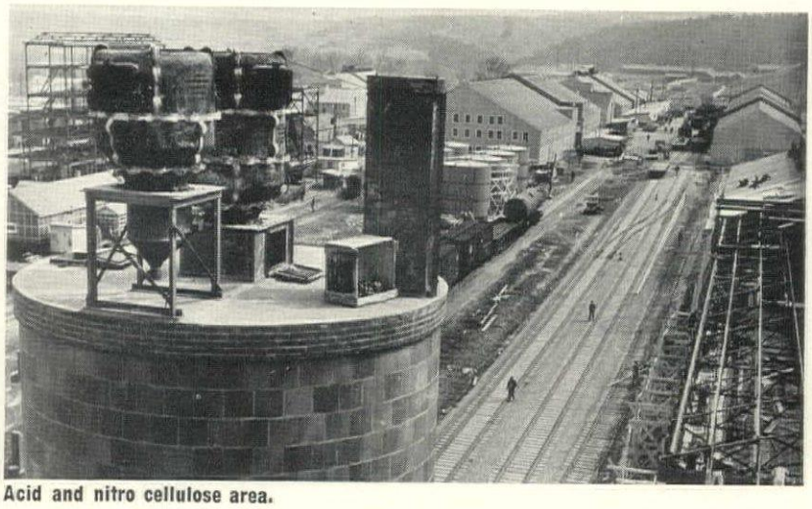
Those used in the first stage of the process, where the material handled is highly inflammable but not explosive, are grouped together in a section known as the "cotton area." Those used in the second stage, where the material handled is highly explosive, are widely spaced and form what is called the "powder line." Material is conveyed from one building to another first by flumes, then by motor trucks, and finally —when the highly explosive stage is reached—by small hand carts. In general, smaller and smaller quantities are processed at one time as the material becomes more and more explosive.

The Nitrocotton Area, the first in the manufacturing process, must guard against two main hazards, fire and acid burns. Cotton in itself is very inflammable, but after

RADFORD ORDNANCE WORKS, U. S. ARMY



Ingredient warehouse.



Acid and nitro cellulose area.



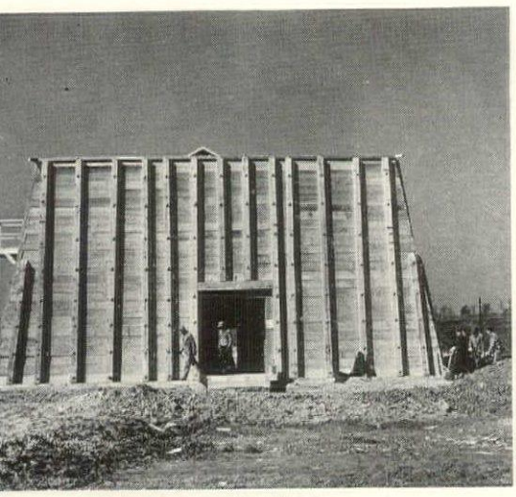
"Water-dry houses." Material goes from building to building by truck.

Safety chutes, for use in case of fire.

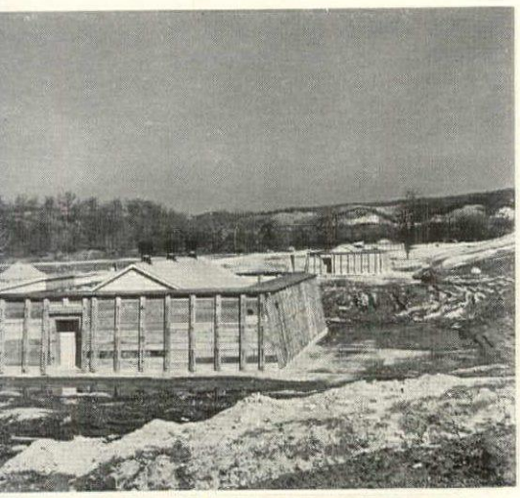


"Blow-out" construction controls direction of explosions.





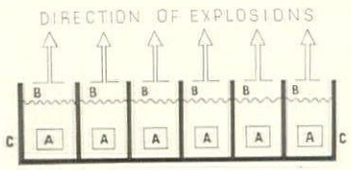
Solvent recovery building.



Barricaded temporary storage building.

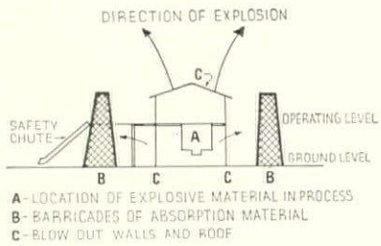
being nitrated, this hazard increases many times. The nitrating process is therefore housed in fireproof masonry and steel construction. Next, the nitrated cotton goes through a number of processes suspended in water, a state in which it is not explosive nor is it readily fired. Since the prime requirement of all of these houses is shielding which will prevent the accumulation of cotton dust, wood frame construction covered with galvanized iron is used.

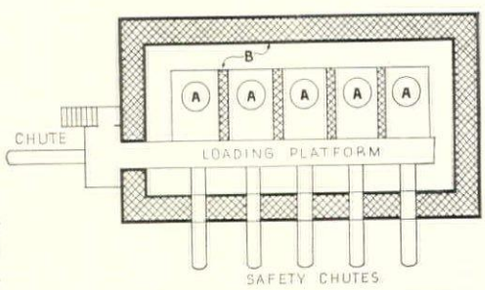
From the Nitrocotton Area the material passes into the Powder Area. From here on a unique type of construction, adapted to handling of explosive materials, is required. All of the buildings in the powder line make use of "blow-out" construction designed to control the direction of an explosion through one or more extremely light screens which will "blow-out" with a minimum increase in the air pressure within the building. Not only does this method save other portions of the building from



damage, it also deflects the force of the explosion in a direction in which there will be nothing in its path for a set distance, beyond which its force will have been spent. A second method of limiting the effects of explosions on both life and property is used in the solvent recovery buildings and those in the finishing area, which are spaced from all other buildings and from each other and surrounded by barricades. Spacing varies according to the maximum amount of explosive which is to be processed or stored in the building at any one time. With the use of barricades, it may be reduced by one half.

The solvent recovery buildings are fully barricaded on four sides with access portals to permit the flow of materials. Barricades are constructed of heavy timbers with a plank face on each side and a screened dirt fill, making a solid wall with an average of approximately 5-foot thickness to absorb the shock of any possible explosion.



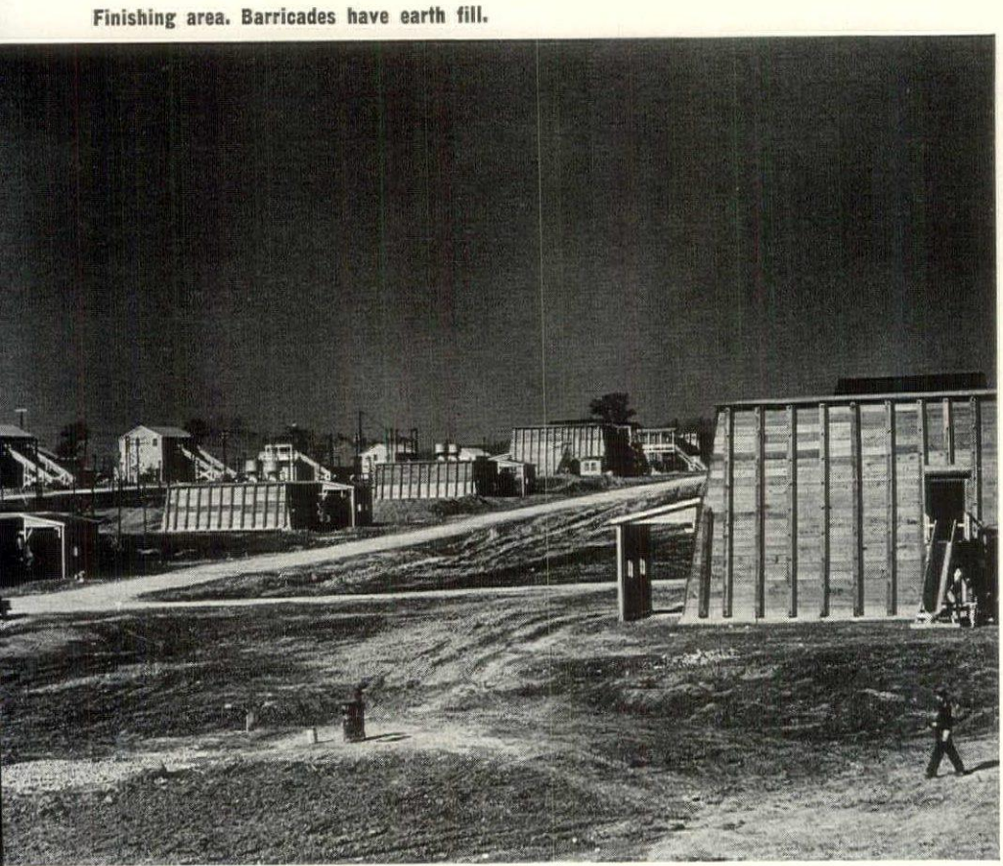


Their height roughly corresponds to the height of the buildings they surround.

This type of construction is used for several reasons. A combination of wood and earth has a tendency to absorb rather than to deflect the force on an explosion; and while the barricade may entirely disintegrate, it absorbs energy through disintegration and tends to confine the force of the explosion to the limits of the structure. By rapid disintegration under pressure forces, the wood does not become a missile, and for that reason is a much better material than masonry or steel.

The recovery house itself within the barricade consists of a series of tanks in a line, each tank being separated from the next by a concrete party wall extending from the foundation up to the charging floor. From the charging floor to the top of the fire wall, the party walls are constructed of wood, covered with asbestos lumber and filled with monolithic gypsum. The front and back walls of these buildings are of light frame construction which will blow out easily to relieve confined pressures. All hazardous buildings are equipped with safety chutes to provide for the rapid exit of the men in the upper floors in the event of an explosion or fire. Safety doors lead from the building to the tops of the chutes. Floors are covered with a non-sparking composition material and all equipment is grounded to prevent explosions from direct electrical or static contacts.

Finishing area. Barricades have earth fill.

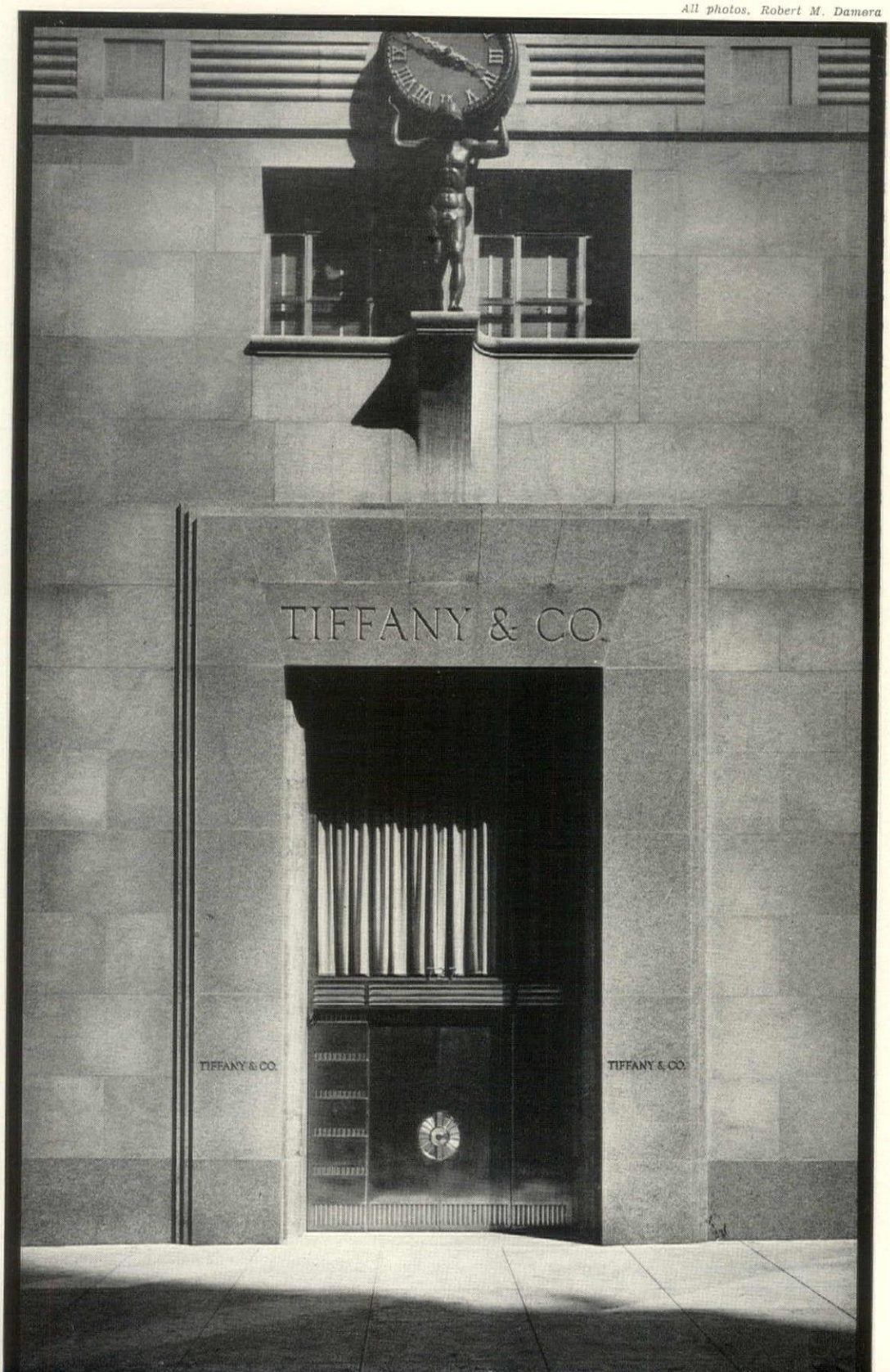


TIFFANY & CO.

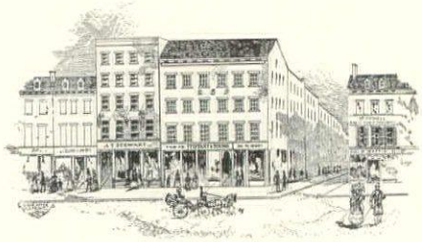
NEW YORK CITY

CROSS & CROSS
ARCHITECTS

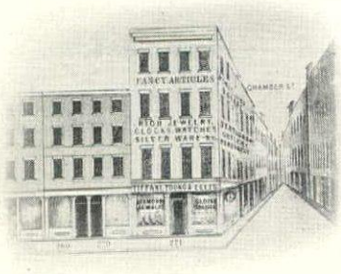
All photos, Robert M. Damora



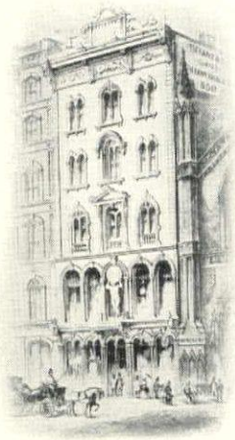
TIFFANY & CO., NEW YORK CITY



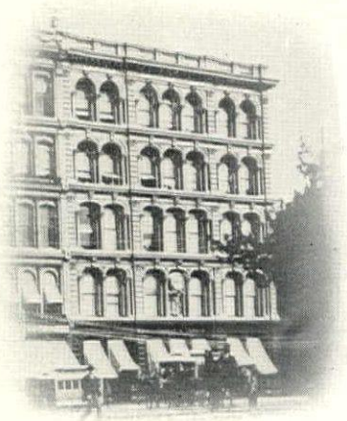
1837



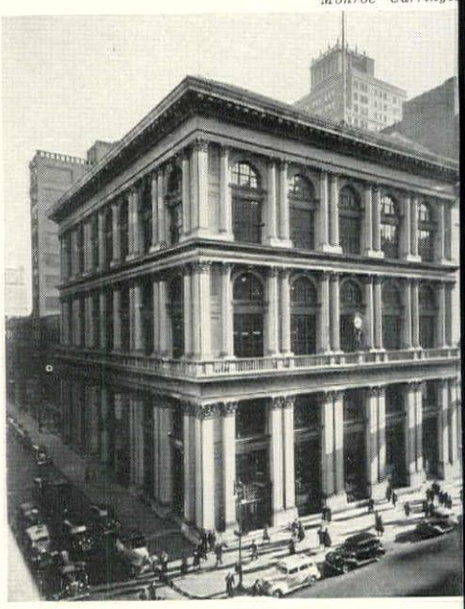
1847



1854



1870



Monroe Carrington

1905

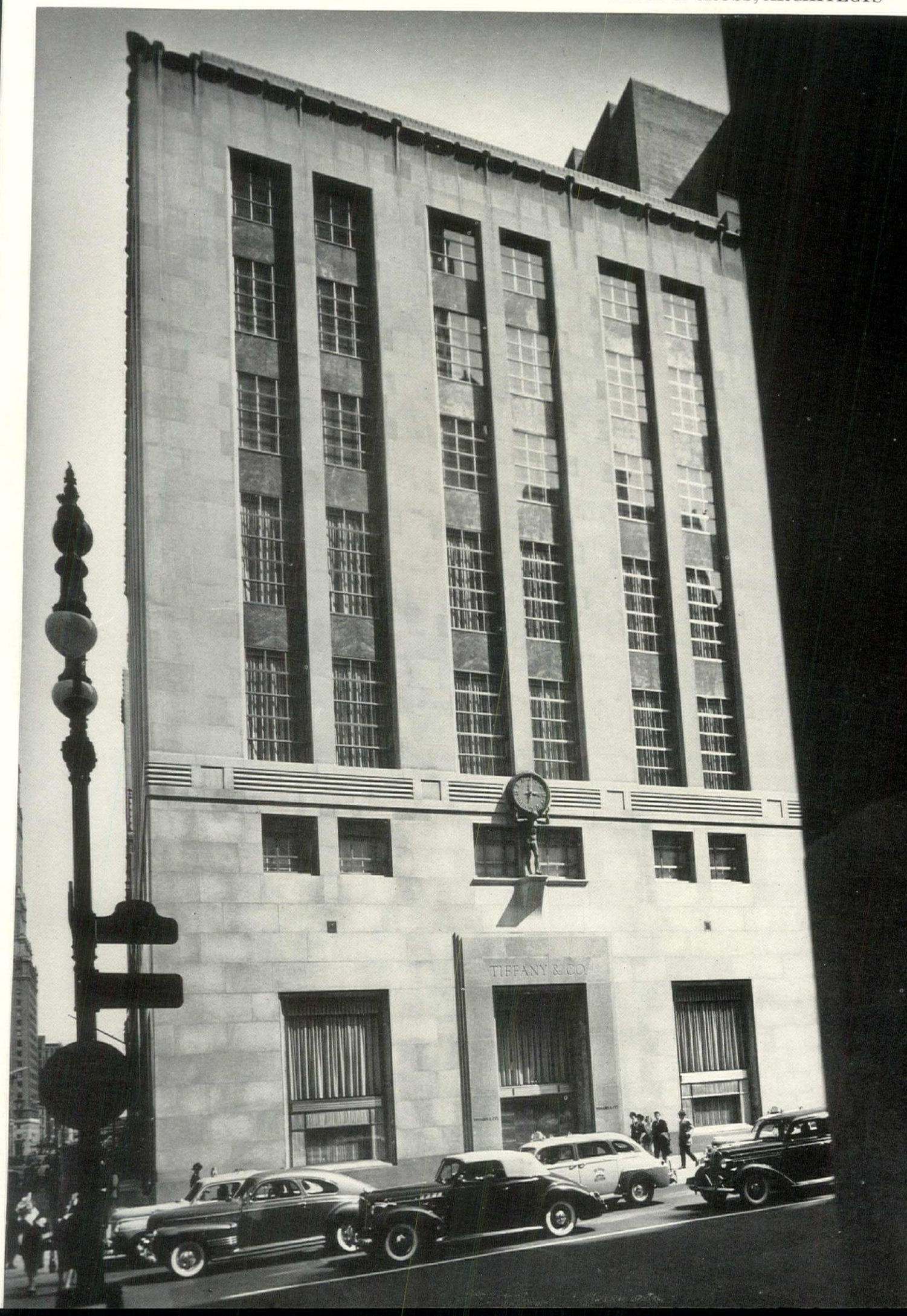
By Joseph Hudnut

It would be interesting to know the date at which a commercial enterprise was first housed in a monument. It must have been late in the XVIII Century, after the Roman and Greek Revivals had overcome that sense of decorum and of measure which, in the Georgian age, had restricted to Church and State—and to their ministers—the expression of grandeur and power in architecture. The idea had, no doubt, a European origin but it came soon to have an American flavor and flourished here. After Strickland had adapted the Monument of Lysikrates to the uses of the Philadelphia Stock Exchange and Latrobe had canopied the Center Square Water Works with the dome of the Roman Pantheon, there seemed to be no reason why Harper Brothers should not move into Libreria Vecchia or why, after a decent interval of growth, Wanamaker and Company should not remodel for their own uses the Palazzo Riccardi.

In 1857, when the building at the corner of Broadway and Broome Street was built for Tiffany and Company, cast-iron was widely exploited as a material for facades. The themes of Sansovino and Francois Mansart, translated into a medium somewhat insensitive to their more fugitive subtleties, were used to form the frontispieces of our great mercantile houses and gave to lower Broadway a quaint grandeur which must have been impressive since it won repeatedly the applause of foreign visitors, even those from Chelsea. People became accustomed to monumental architecture as the symbol of commercial success and even after cast-iron had gone out of fashion and even after our culture was again submerged under one of those periodic tidal waves from Europe, the tradition remained. When, in 1905, the building for Tiffany and Company was built on Fifth Avenue that street was about to be lined with the splendor of palaces which, although built for the use of commerce, were intended to recreate on that thoroughfare a majesty of vista not unlike that of the Grand Canal.

What exemplar could be more appropriate as the salesroom for jewels—at a time when architects had become themselves the importers of architectural gems—than that vast monument which Sanmichele had built for the great family of the Grimani, guardians of the Republic at Candia and in the Dardanelles? A few adaptations were of course necessary. The princely water-gate, for example, was found to be unsuitable for an establishment whose clientele could scarcely be expected to arrive in gondolas; and the balconies which commanded the pageant of the Canal would have been somewhat adventitious elements over the asphalt of Thirty-seventh Street. A certain grandeur and stability disappeared with the substitution of plate glass for the powerful masonry of the first story; a certain vitality when the five bays, alternately wide and narrow at Venice, were made uniform in New York; a certain elegance when the patined and chiseled stones of Venice were translated by machine cutting into the parvenu stones of Indiana. Otherwise, the replica was perfect. A famous critic of our own day has praised the "powerful, persuasive and beneficial effect" upon the taste of New York.

Another wave from Europe submerges our architecture; it recedes and, receding, takes from sides of our buildings their rich encrustations of arch and column and romance. Yet, even now, the monument remains. Resolute to be modern, the architect of the new Tiffany Building, now completed at the corner of Fifth Avenue and Fifty-seventh Street, omits from his facade every evidence of an architectural past, but not that prin-

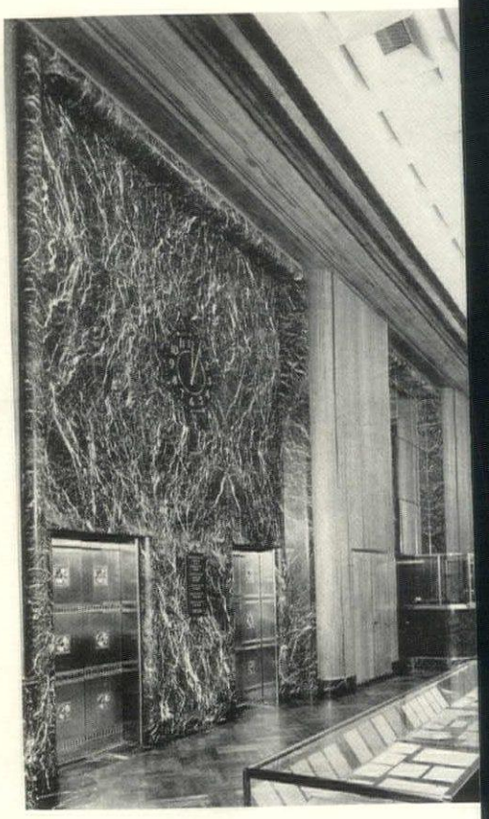

TIFFANY & CO.

ciple of form established in an era when men built for eternity with blocks of stone. The pattern, sustained by an armature of steel, is still that of the monument; of mass piled upon mass; of heavy podium firmly planted on the earth, lighter attic dissolved against the sky, and between these the active verticals which recall, without affirming, the peristyle. A phantom classicism reduced by simplifications and omissions to a theorem merely in order that it may be made harmonious with this our mechanized world.

The monument is not of course a real monument. It is only a cloak thrown over an implement of commerce. It is like one of those marble-and-bronze clocks which weighed the mantelpieces of our grandfathers: a ponderous and precious casing for a mechanism that is utilitarian and precise. The architect, so orthodox on his facades, is bold enough when it comes to the machine which these enclose. On the interiors, where he must address his art to needs that are real and exigent, he is quick enough to forget the monument. There is no temple inside, no effect of stone piled on stone, where every element of structure and surface, of space and light, of furniture and mechanical device, is made to conform to the quiet sure promotion of the business in hand. How admirable are these things and how expressive: these counters and cabinets so aptly designed for the display of every variety of the stock in trade, this perfect organization of installation and circulation, this science of merchandising clothed in forms at once so elegant and so completely functional. And behind the scenes, what miracles of device and skill, of integration and adaptation: the systems of heating, wiring, and air conditioning; the perfect lighting; the facilities for receiving, packaging, and storing, for the comfort and health of employes and customers, for the administration and control of the business.

How does it happen that the art which in these interiors has so eloquently apprehended and expressed the true form and energy of modern commerce — which has endowed these with so much distinction, grace and good sense—is so impotent to give life to the facades? Is there, then, no principle of form in this miracle of organization which, continued into and through the outer fabric, might have given these also meaning and power? Is there no theme for architecture discoverable even in this ancient and established enterprise of Tiffany and Company, threaded as it is through and through the social life of New York; no dignity of service capable of translation into the language of steel and glass and stone? Alas, between the architect and the attainment of that just expression there stood—the monument: the dense, arrogant, and estranging monument, entrenched behind tradition and professional usage, behind precedent, habit of vision, and aristocratic sanctions. Because the architect must follow the rules of the game, because he must respect principles of form, because, in short, he cannot even conceive architecture in other than monumental terms, no inward light can find its way to illume these arid, harsh and timid facades.

I am curious enough, at this moment, to conjure up in my imagination still another Tiffany Building—there will be, of course, another—and to wonder if that, too, will be a monument. The applause which greets the present building is, it seems to me, somewhat more hesitant than that which appears to have been given to each of its predecessors; and I find, I think, a certain impatience, even among big business men, with academic form and principle. I believe that the architect of the next Tiffany's trained in a different school, sustained by a deeper faith, will find a way to translate into the outward aspect of his building—to be built, I suppose, at 280th Street—that genuine and romantic dignity which even now is an attribute of the interiors: a dignity which could not be rooted in classic tradition, but which must be rooted in a contemporary task to be done, a contemporary idea to be expressed. I believe that because I believe in American architecture.



J. GORDON CARR
Consulting Equipment Designer

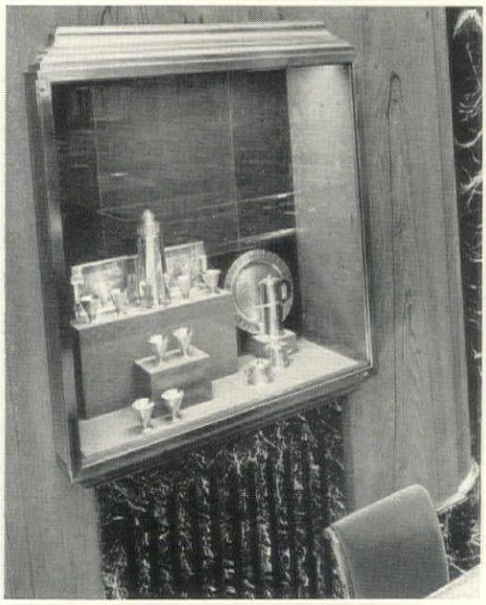
JAROS, BAUM & BOLLES
Consulting Mechanical Engineers

CLIFTON E. SMITH and
EDWARD B. SILVERMAN
Consulting Electrical Engineers

WEISKOPF & PICKWORTH
Consulting Structural Engineers

TURNER CONSTRUCTION CO.
General Contractors

MAIN FLOOR

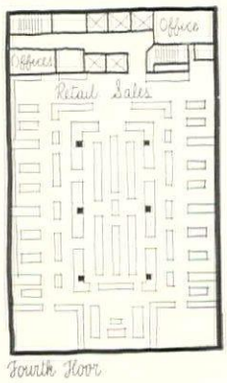




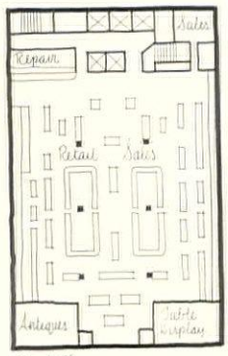
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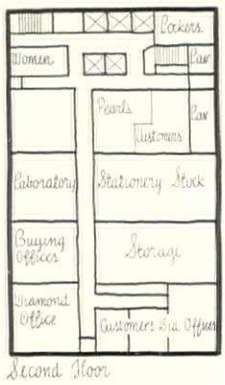
FOURTH FLOOR



Fourth Floor



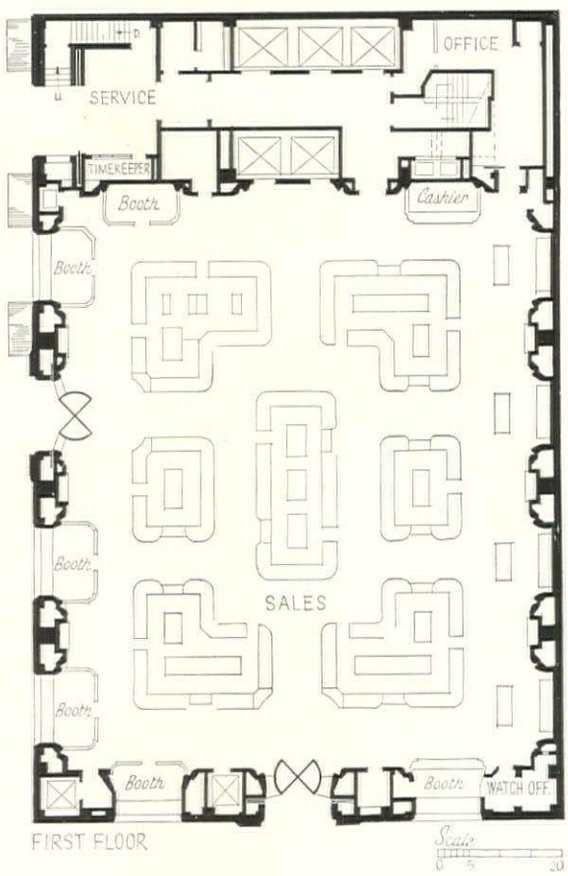
Third Floor



Second Floor

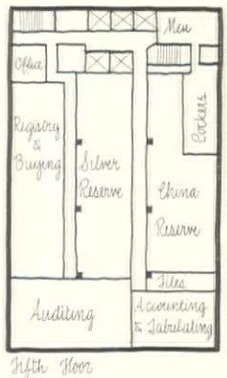
THIRD FLOOR



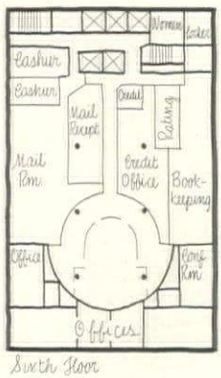


FIRST FLOOR

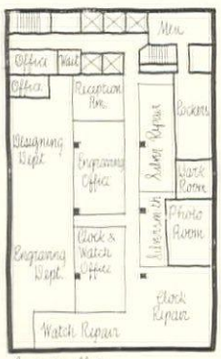
CROSS & CROSS, ARCHITECTS



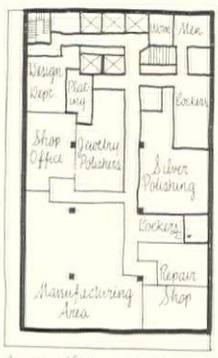
Fifth Floor



Sixth Floor



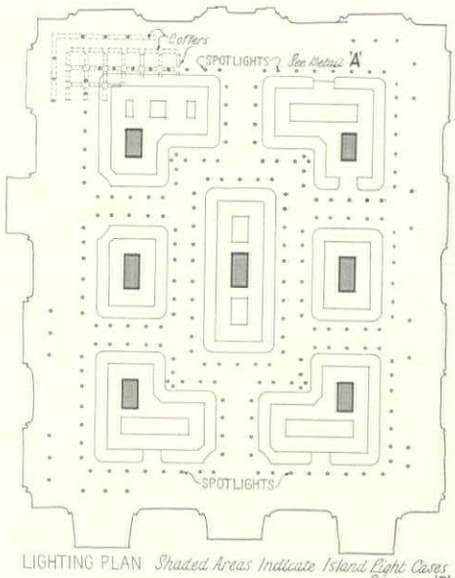
Seventh Floor



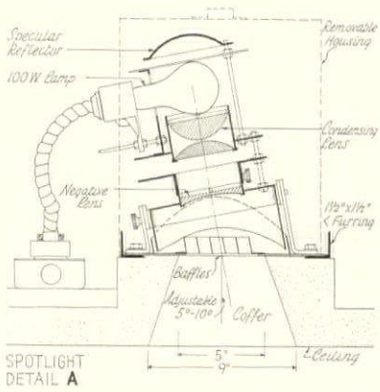
Eighth Floor



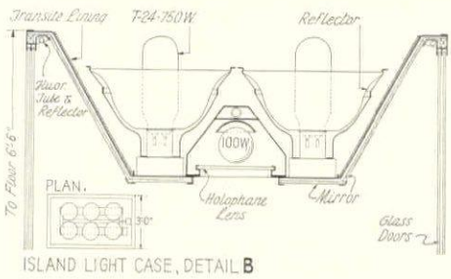
FOURTH FLOOR



LIGHTING PLAN. *Shaded Areas Indicate Island Light Cases. See Detail* **B**



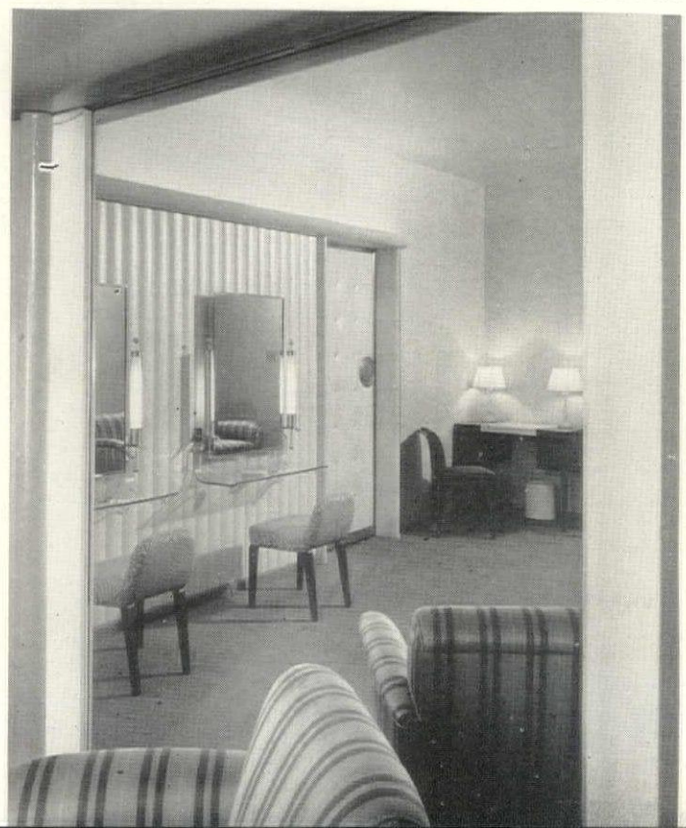
SPOTLIGHT DETAIL **A**

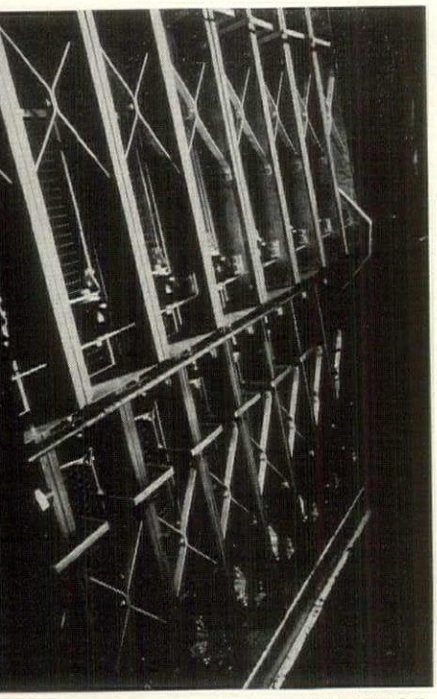


ISLAND LIGHT CASE, DETAIL **B**

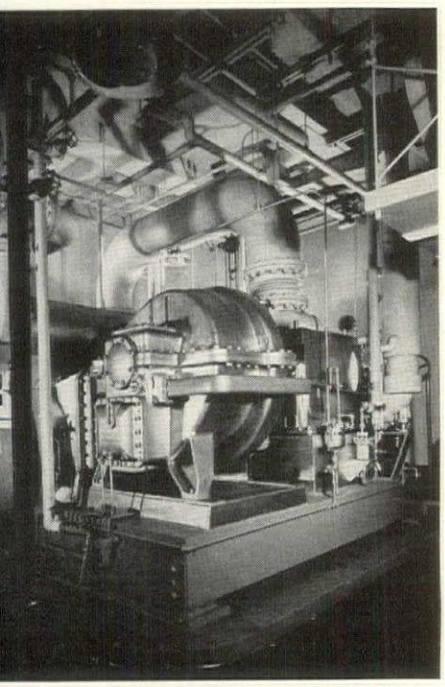
LIGHTING throughout the new building has been worked out to emphasize and flatter the merchandise and, at the same time, to set a general tone of quiet, unostentatious elegance. This objective is most successfully attained in the main, ground-floor salesroom, which has a unique and entirely invisible lighting system designed as an integral part of the building and equipment. Indirect general illumination is provided by the coffered, acoustical-plaster ceiling, which reflects the light from concealed high-wattage lamps located above eye level in the tops of six of the island display cases (shaded on plan, also shown in detail section). Direct light for display counters comes from more than 200 spotlights (see detail) located behind louvered openings in the ceiling and directed downward at a slight angle so as to avoid reflections from the glass tops of the counters. Island display cases have pencil-thin high voltage fluorescent tubing (sign tubing), contained in stainless steel reflector channels around their sides and top. Above the main floor, show case lighting is similar, general illumination provided by specially designed fluorescent luminaires attached to the ceiling and fitted with diffusing glass covers.

LADIES' LOUNGE

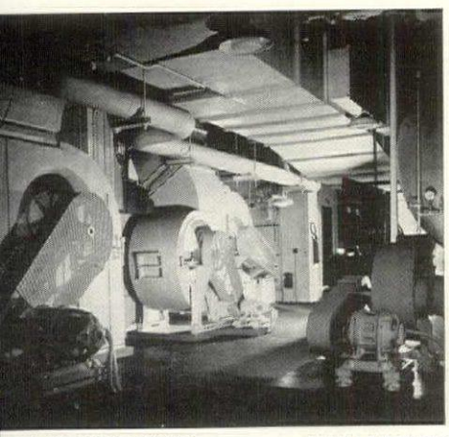




PRECIPITRON



CENTRIFUGAL COMPRESSOR



(Joseph W. Molitor Photos)

FAN PUMPS

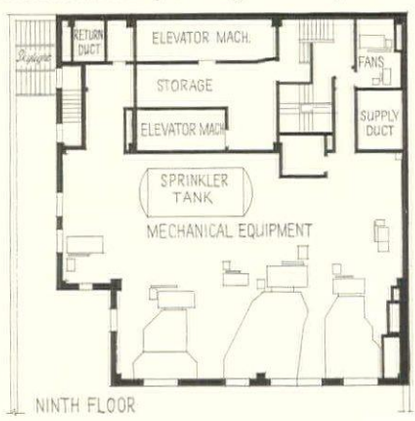
AIR CONDITIONING

Tiffany customers, according to news releases, are breathing "the world's cleanest air." Basis of this claim is the year-round use of the Precipitron, an electrical air cleaner which removes 90 per cent of airborne dust, dirt, and pollen, in conjunction with the building's system of year-round air conditioning. The system is one of the first to be designed as an integral part of an entire store of this size.

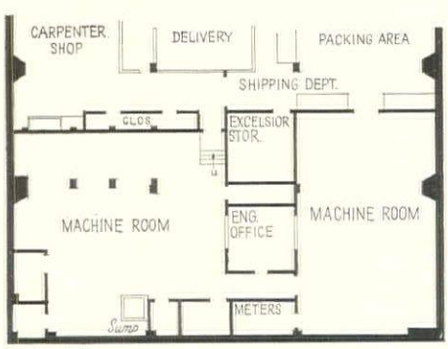
Summer and winter, Tiffany air will be maintained at exactly the optimum temperature by steam furnished by the New York Steam Corporation, which will also supply the power to light the building and operate the elevators. Cooling is by a centrifugal refrigerating compressor driven by a condensing steam turbine, and located in the basement. Cooling effect, which is equivalent to 400 tons of ice daily, is imparted to a chilled water circulating system.

All floors above the basement are ventilated by fans located in a two story penthouse above the roof. The system is designed to furnish fresh, outdoor air at the rate of 10 to 12 air changes per hour, and to recirculate a portion of the air during peak cooling and heating periods. It is divided into six separate sections, so as to provide individual control for the various sales and office areas.

When heating is required, steam is piped to the various fan rooms to warm ventilating air. In addition, radiators are provided which may be used to heat the building with the ventilating system turned off, if this is desired. Heat for the first floor is provided by hot air from a separate system in the basement, and arranged to create a curtain of hot air across each entrance door and window sill, so as to prevent drafts. Equipment is also provided to maintain optimum humidity throughout the year.



NINTH FLOOR



BASEMENT

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls: Basement—reenforced concrete, 1 in. hydrolithic cement inside. 1st. and mezzanine—granite, John Swenson Granite Co., brick backup and terra cotta. 2nd floor sill course to roof—Indiana limestone, Carl Furst quarries, brick backup, terra cotta, furring and plaster. Interior partitions—standard metal baked enamel and grained finish, flush and panel type, E. F. Hauserman Co., also terra cotta partitions, plastered. Columns—steel. Structural steel—Bethlehem Steel Corp. Floor construction—light-weight concrete, Gritcrete, Aerocrete Corp. Ceilings—acoustical plaster, Sabinite and Acoustone tile, U. S. Gypsum Co. ROOF: Covered with tile, Ludowici-Celadon Co. and built-up Johns-Manville.

SHEET METAL WORK: Flashing—Anaconda copper, American Brass Co. Ducts—Republic Steel Co. Metal partitions and railings—E. F. Hauserman & Co.

INSULATION: Roofs—Cork Insulation Co. WINDOWS: Sash: Mezzanine floor—stainless steel, Allegheny-Ludlum Steel Co. and American Rolling Mills Co. material 18-8. Special size and type above mezzanine—General Bronze Corp. Glass—polished plate, water white Crystalex and special 3-ply shatterproof laminated for lower show windows, Pittsburgh Plate Glass Co. Awnings—concealed built-in, New York Awning Co.

STAIRS AND ELEVATORS: Stairs—stock steel and cement tread, Fassler Iron Works. Elevators—Otis Elevator Co.

FLOOR COVERINGS: Sales room (1st floor)—teakwood, marble border. Remainder—asphalt tile and cork, David E. Kennedy, Inc. WALL COVERINGS: Salesroom (1st floor) and executive offices—teakwood, Hayden Co. Salesrooms (private)—prima vera, English oak, French walnut. Pearl rooms and powder room—silk fabric, Katzenbach & Warren. FURNISHINGS: Counters and display cases—Ammann-Goertz Co. and Jacob Froelich. Lockers—Berger Mfg. Div. Republic Steel Corp. Steel shelving—Remington-Rand Co. DOORS: Interior—hollow metal, Superior Steel Door & Trim Co.; wood—teak and prima vera. Revolving doors—stainless steel, Van Kannel Revolving Door Co. Decorative and sliding doors—Allied Bronze Co.

HARDWARE: By Yale & Towne Mfg. Co. PAINTS: By Keystone Paint Co., Monroe-Lederer & Tausig and Preservative Products Co. Special wood finishes—Breinig Bros.

ELECTRICAL INSTALLATION: Switches—Harvey Hubbell, Inc. and Hart & Hegeman. Fixtures—Edward F. Caldwell & Co., Century Lighting Co., Garden City Lighting Co. and Barken Frink Co.

PLUMBING: Filters—Filtrane Mfg. Co., House tank—Lancaster Iron Co. Controls—Clark-Sundh Co. Fixtures—American Radiator-Standard Sanitary Corp. Pipe covering—Johns-Manville. Accessories — Hoegger Co. Drains—Brayman Co. Oxygen equipment—Linde Air Products. Chilled water equipment—York Ice Machine Co. Water meters—Worthington Pump & Machinery Co. Soil pipes—cast iron, Central Foundry Co. Hot and cold water pipes—red brass, Revere Copper & Brass, Inc. Fittings—Crane Co., Jenkins Bros., W. D. Allen Co. and National Tube Co. Pumps—Economy Pump Co., Quimby Pump Co., West Co., DeLaval Pump Co. Sewage ejector—Nash Engineering Co.

AIR CONDITIONING: Year round system. Centrifugal compressor—Carrier Corp. Condensate cooler and water heater—Patterson-Kelley Co., Inc. Precipitron installation and motors—Westinghouse Electric & Mfg. Co. Vacuum specialties—C. A. Dunham Co. Pipes—National Tube Co. Fittings—Crane Co. Fans—Claridge Fan Co. Filters—American Air Filter Co. Radiators—American Radiator Co. Thermostats—Johnson Service Co. and Energy Control Co. Valves—Jenkins Bros. and Boig & Hill. Air diffusers—Anemostat Corp.

BUILDING MONEY

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Camden Planner Col. Lawrence Westbrook — *Thos. D. McAvoy*

NEITHER FOR SALE NOR RENT are houses at Camden, N. J. defense project. Col. Westbrook combines advantages of both merchandising methods, invents a mutual financing plan for investors and occupants.

For centuries there have been but two ways to buy shelter. A family either rents its dwelling and pays extra for the privilege of irresponsibility or it buys a house with cash and a mortgage and assumes a long-term financial burden. Each method serves a purpose; both have their shortcomings; with the result that, despite the endless arguments of their proponents, the case of rental vs. purchase is still a draw. As for decades past, U. S. families are still divided about 50-50 between tenants and owners. But, the deadlock may be broken in this decade, if a recent Government development in the home finance field proves as significant and revolutionary as some authorities believe.

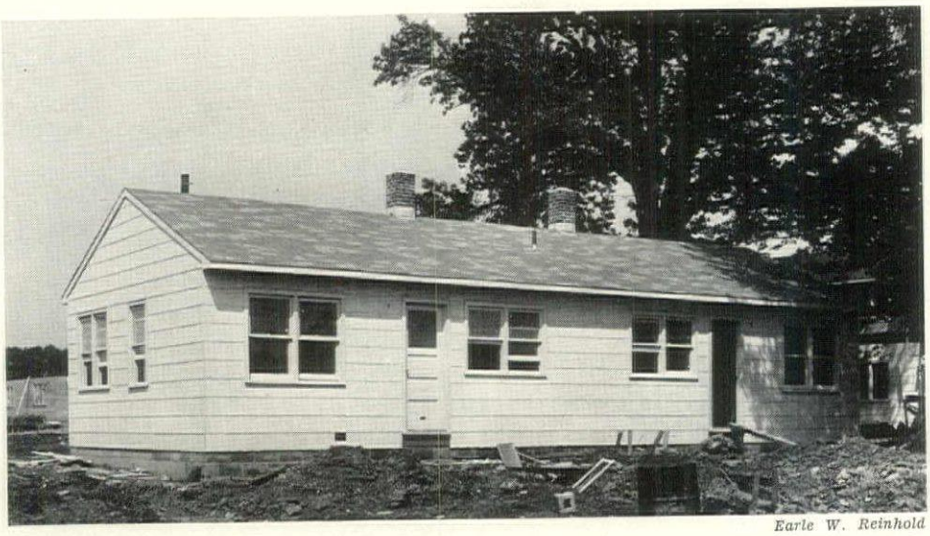
At Camden, N. J. last month, the Government opened the first of 500 defense houses to the families of local shipyard workers, launched a unique financing system which, if successful, might well be adopted by private enterprise as a profitable investment channel and a means of relieving the housing problem. It is neither a rental nor a purchase program, yet it involves some of the principles of both. It is a mutual house finance plan, whereby a family subscribes to stock in a housing company equal to the value of the property occupied, and pays off its subscription with comparatively low monthly payments which also cover all expenses of the operating company and build up reserves for the maintenance, repair and vacancy of the family's dwelling. If the occupant is forced to move outside the project after the first year, he would receive half the value of his paid-up stock plus most of the balances in his reserve funds after all expenses occasioned by his leaving have been met. In brief, the relationship between the occupant and the mutual company is closely analogous to that between a mutual insurance company and one of its insured whose life policy acquires a cash surrender or paid-up insurance value.

Camden Planner. No half-baked proposal, the Camden Plan has been developed over a period of years by its inventor, Col. Lawrence Westbrook. In 1938, he put his financial scheme on paper, platted a 1,000 house "Park Living Development" in Duval County, Fla., eventually abandoned it when private enterprise failed to ante the $271,200 in mortgage proceeds required for the initial 111-house section of five cul-de-sacs. After further research and perfection, the plan was presented to the business troubleshooters of Government's Temporary National Economic Committee which buried it under heaps of testimony pointing to the need for some such solution to the housing problem. There it remained until last fall when Federal Works Administrator John M. Carmody called Westbrook to serve as his special assistant in the prosecution of the FWA's $350 million defense housing program. Forthwith, Westbrook dusted off his "Park Living Plan" adapted it to operation with Government money and induced Boss Carmody to give him some defense housing money with which to try it out; changed its name to the "Camden Plan" in honor of the trail-blazing project.

In essence, the Camden Plan is an adaptation to housing of principles which have long provided Westbrook's bread and butter. Thus, after an extended interval of electrical and agricultural engineering between his University of Texas education and 1930, Westbrook organized the farmers of his home county in Texas into a co-

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Last month, THE FORUM *looked at Audubon Village near Camden, N. J. from the construction point of view, found that partial prefabrication made it one of the fastest growing projects in the Government's defense housing program* (ARCH. FORUM, *May 1941, p. 341*). *This month* THE FORUM *examines a new financing plan which is being demonstrated at Audubon Village, discusses its significance.*



Earle W. Reinhold

Camden houses near completion prior to last month's opening. These two four-room units will be valued at about $2,800 each, will "rent" for about $30. (For other pictures, see Arch. Forum, May 1941, pp. 341-4.)

operative marketing body in an effort to boost their profits. Later he worked his way up from the directorship of Texas' Relief Commission to the position of Assistant Federal Emergency Relief Administrator (in which capacity he rehabilitated some 200,000 rural families) and finally became Assistant WPAdministrator. In 1936 he resigned to devote more time to private matters—among them the development of the Camden Plan's prototype.

Early in his housing studies, Col. Westbrook concluded that the cash down payment was the major obstacle to the provision of housing for low incomers. Reason: more than half of all U. S. families earning less than $1,500 per year are in debt and the average savings account for this sizable group is a scant $65. Yet, Westbrook discovered that many of these families earned enough to pay $30 per month on a house, concluded in his TNEC testimony that a purchaser from this group "is actually a far better risk, if his cash is in the savings bank and the savings bank holds the bonds against his house, than he would with a smaller mortgage and no free cash to meet emergencies."

To eliminate down payments and reduce monthly housing costs, Westbrook in his Park Living Plan proposed a close coordination of public works and private enterprise. Government relief agencies would shift some of their less useful activities to the provision of streets, sewers, water works and other public facilities in housing projects to be built by private enterprise. Resultant low costs to the operating limited dividend companies would make possible the marketing of the housing at extraordinarily low figures. Interestingly, the plan involved no new appropriation of Federal funds, no new legislation.

Camden Plan. While the injection of some $1.5 million of Government defense housing funds into Westbrook's introductory project at Camden has required that his original financing plan be altered, many of its details remain unchanged. Herewith a step-by-step analysis of its operation:

Since in this public housing project the Government furnishes all of the initial capital, it must logically assume complete responsibility for its management during its early years. This responsibility will later be assumed by the occupants of the dwellings, but only after they have acquired sufficient equity in the development to protect the Government against any loss.

Meanwhile, Government will sell or lease the entire property to a state-chartered mutual housing company (corporate title at Camden: Mutual Homes Corp.), all of whose stock will be owned originally by the Government. Each family accepted by the company as eligible for participation in the plan will enter into an installment purchase contract for Government stock equal in value to that of the dwelling unit to be occupied. Thus, the accepted occupant of a four-room house in the Camden project will agree to pay for $2,800 worth of stock over a 25-year period*. (See tabulation, p. 445.)

The resident stockholder then enters into a lease contract with the mutual housing company, requiring monthly payments sufficient to cover the stock subscription installment (called amortization), 3 per cent interest on the Government's diminishing investment in the dwelling, insurance, taxes and administrative expenses of the company and to build up reserves for maintenance and repair, vacancy and general contingencies. Payments toward interest would go through the company to the Government. So would the amortization payments, but only after they have been credited to the stock subscription of the resident stockholder. As for insurance, the housing company would merely serve as a collection agency for the insurance company. Differing from most public housing projects, the Camden development will involve no tax exemption; taxes paid by residents as part of their monthly payments will go through the housing company to the political subdivisions which levy them.

Since the other three components of the monthly housing payment go into reserve funds to meet contingencies, they do not necessarily represent money spent. Thus, maintenance and repair expenses will be estimated for each dwelling unit and will be billed to the resident stockholders as part of their monthly "rent." Any excess over actual maintenance and repair expenses for any dwelling will be credited to an individual reserve account of the occupant. Vacancy reserves will be similarly established on an individual account basis. However, any excess in individual payments for administrative expenses over actual administrative costs will be pooled in a general reserve fund.

Case Studies. As shown in the accompanying tabulation (right), the occupant of a four-room house in the Camden project will ante $30 per month, or $360 a year, to cover all these costs and reserves. Biggest items are amortization and interest at $5.84 and $7 respectively; next biggest, $6 for maintenance and repairs. But, as explained below, $360 is not the net annual housing cost to the family.

As is the case under usual rental procedure, provisions in the Camden Plan make it as easy for a family to pack up and move. If the family leaves during its first year, it has nothing coming to it—the gross monthly costs are also the net costs. After the first year, however, the vacating family is entitled to a considerable refund. Assuming that it moves out without attempting to find a new and eligible family to take its place, the refund will amount to 1) half the amount paid in toward amortization, plus 2) half the amount left in its vacancy reserve after deducting all losses occasioned by actual vacancy, plus 3) whatever is left in the maintenance and repair reserve fund after deducting previous expenses and the cost of any renovation that is deemed necessary, plus 4) a quarter of the family's proportionate share of the project's general reserve fund.

Note the close analogy of this rebate procedure to life insurance practices. On most all insurance policies (exception: term insurance) part of the periodic premium payments go into reserve funds which, after the first year, are credited to the policyholders and constitute the cash surrender value or paid-up insurance value of the policies. A policyholder may recoup the cash value upon surrender of his policy, or he may use the reserves to pay his premiums during a period of emergency, or he may borrow against his policy. Similar benefits are available to the resident stockholder under the Camden Plan; he may draw out his reserves when he terminates his contract by moving, or he may use his reserves to pay his "rent" during a period of financial stress, or he may borrow against his various reserve accounts.

*All figures presented herein which concern the operation of the Camden project, while they will probably be substantially the same as those used in actuality, are tentative and for illustrative purposes only. Unit values at Camden will equal total costs less WPA contributions and some unusual expenses attributable to the emergency. Sum of these two items is the extent of Federal subsidy.

Unlike insurance, however, a resident stockholder will have considerable influence upon the proportion of his monthly payments which will be returnable to him. Thus, by taking good care of his quarters he will minimize the amount of the maintenance and repair reserve fund which will have to be spent by the housing company, and, by finding an eligible family to take over his contract as soon as he must move, he will preserve for himself his maximum (50 per cent) share of the vacancy reserve fund. For example, if a family moved out at the end of the second year after having maintained its four-room house in perfect condition and after having found a family to take its place immediately, it would get back about $128 of the $360 it paid out during the year. Breakdown: $35.04 as half of the amortization payment, $72 as the entire maintenance and repair reserve, $18 as half of the vacancy reserve and $2.58 as one-quarter of the general reserve fund (assuming that the company had not been forced to dip into this fund). In effect, therefore, this family under these optimum conditions pays only about $19 per month, ($4.75 per room) for the preceding year's housing—a figure encouragingly close to the average $12.92 per unit per month paid for comparable quarters in heavily subsidized USHA public housing projects. (Only subsidy in the Camden project is the cost of WPA labor used for grading and other site improvements.) Under any circumstances, minimum rebate for a family that wished to terminate its contract on a four-room house at the end of the second year would be about $74, which would reduce its net monthly housing cost to about $24. This would, of course, drop to about $17 after the twenty-fifth year when interest and amortization payments would cease.

Noteworthy is the fact that all the foregoing rebate estimates have been based upon percentages effective at the end of the second year of a family's occupancy. It is quite likely, but not yet definitely established, that the percentages of reserves returnable to resident stockholders will be increased with the length of occupancy. Thus, if a family leaves the fold after, say, five years, he may get more than half his amortization reserve, etc. Moreover, to prevent his program from running into financial hot water, Col. Westbrook has intentionally been conservative in fixing the monthly reserve payments required of resident stockholders in his trail-blazing project. If they proved to be insufficient, the project would fail. On the other hand, if the reserve requirements prove to be more than adequate, their excess would eventually accrue to the resident stockholders.

Several other provisions of the Camden Plan will be enviously eyed by all outsiders —renters and owners alike. The lease contracts between the Mutual Homes Corp. and the resident stockholders will be transferable on the books of the company from one stockholder to another, and will thus permit families to move from one size dwelling unit to another in line with their changing family requirements. And, residents will have a hand in the management of the project. At the outset, Government will dictate the operation of the Mutual Homes Corp., but will elect some of the residents to the first board of directors. After the first year's operation, the residents themselves will elect some of the board members, and Government will delegate increasing responsibility to these stockholders as their ability to assume it increases along with the increase in their equities.

Acceptance. Although still untried in the field, the Camden Plan has already made a name for itself. CIO's Housing Committee has urged the Office of Production Management to see that the new financing plan enjoys wider use among defense housing projects. (It is already scheduled for use in three other Westbrook projects.) And, the Manufacturers Assn. of defense-boomed Bridgeport, Conn. speaking for local housing interests, has announced that it is "thoroughly sold on the mutual ownership philosophy which is behind all Col. Westbrook's projects," has asked that all Government contemplated defense housing projects in the Bridgeport area be marketed under the Camden Plan. Its advocates are impressed not only by its novel financing mechanism but also by the "park living" layout of the projects and Government's contribution of land improvement costs via WPA labor.

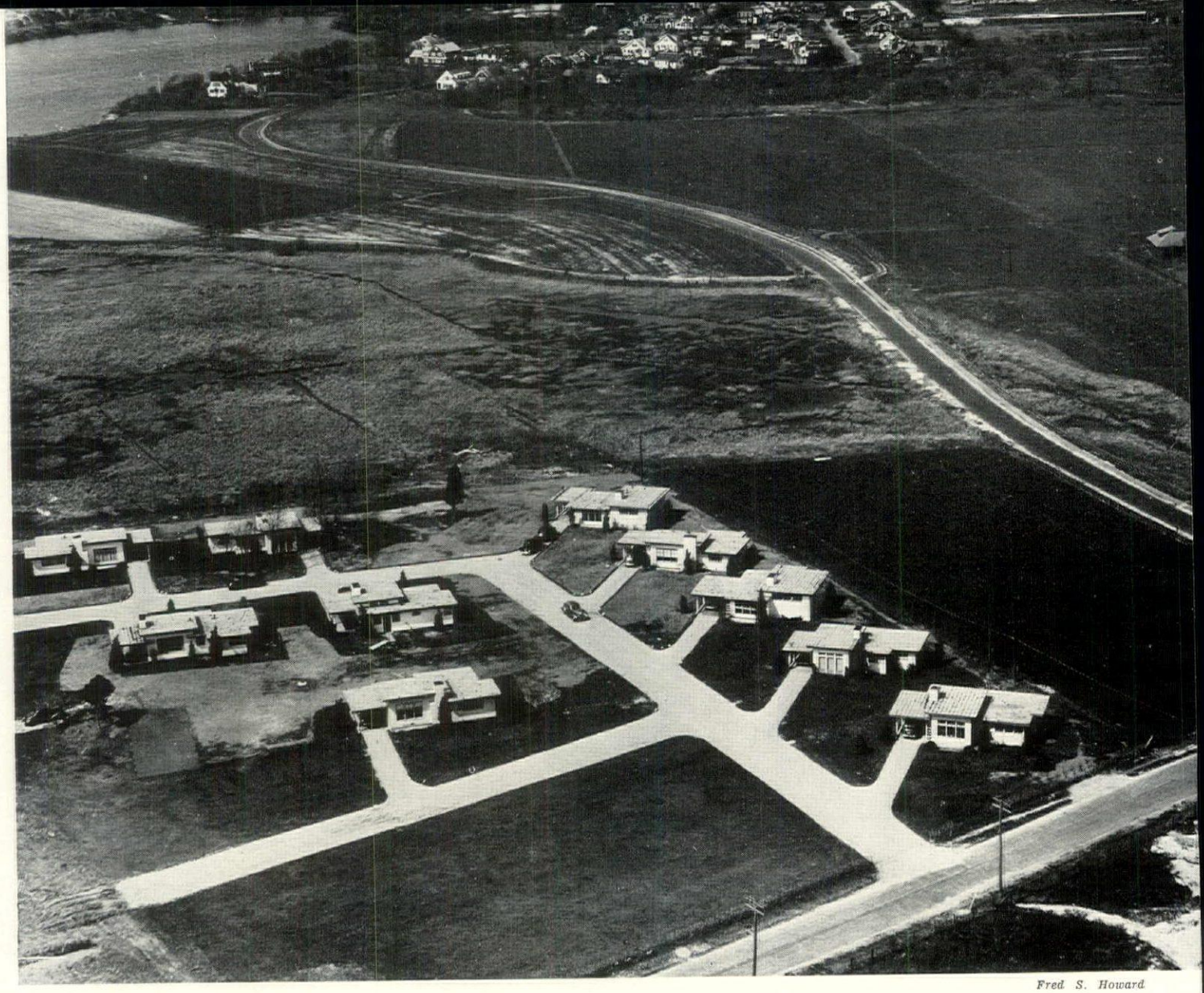
While Westbrook's Camden Plan is serving a useful experimental purpose in the Government defense housing program, it seems logical that Government housers should study its implications as they relate to post-war slum clearance and, more important, that private investors should consider its original purpose—to extend the production of private low cost housing at a profit to all, possibly, with the aid of coordinated and contributed public works. If the Government underwritten experiments prove out and whether or not Federal relief agencies are willing to do their part, it is easy to envision the large scale planning, production and management of housing by mutual companies formed for that purpose or by such existing and important housing investors as banks and insurance companies. Upon further analysis of the Camden Plan, private enterprise may deem it smart to kidnap the plan bodily on at least some of its most important and most adaptable features. Some even label the plan as one of the New Deal's highest cards, which, if played right, may prove to be one of its most significant contributions. Coming from sources outside the Government, these convictions would indicate that the Camden Plan is much bigger than even Inventor Westbrook claims.

Private adaptation. Once the operation of the Government version of the Camden Plan is grasped, it is not difficult to understand how it would operate with private funds and under private guidance. Major difference would occur in the initial development of a project. Thus, while WPAsters with Government funds might still provide the grading, streets, sewers, water lines and other public utilities to reduce the cost of the housing, all other development costs would be footed by private capital. This capital could come as a direct investment from an insurance company. Or part of it (less than the statutory maximum of 80 per cent) could be raised by an FHA-insured mortgage, the balance by the sale of preferred stock in the sponsoring company. In either case, the cost of all public improvements would be capitalized as common stock whose ownership would be limited to the residents in amounts proportionate to the value of their houses. This step would eliminate the necessity for cash down payments and would protect from speculation the unearned increment in the project's value. Reason: Any value which the completed project might have in excess of its cost would not enter into its capitalization. In effect, the project would therefore be under-capitalized, according to current financial standards, and would be able to enter the housing market at

(Continued on page 54)

ESTIMATED MONTHLY PAYMENTS ON THREE HOUSE TYPES IN CAMDEN PROJECT

	3-Room		4-Room		5-Room		Total
Estimated Valuation	**$2,200**		**$2,800**		**$3,400**		**$1,508,000**
MONTHLY PAYMENTS 1st YEAR	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	500-Unit Total
AMORTIZATION	$ 4.59	19	$ 5.84	19	$ 7.09	19	$3,145
INTEREST	5.50	23	7.00	23	8.50	24	3,770
INSURANCE	.50	2	.60	2	.75	2	332
MAINTENANCE & REPAIRS	5.00	21	6.00	21	7.50	21	3,317
RENT VACANCY RESERVE	2.50	10.5	3.00	10	3.50	10	1,592
ADMINISTRATION	2.00	8.5	2.50	8	3.00	8	1,346
TAXES @ 15%	3.30	14	4.20	14	5.10	14	2,262
GENERAL RESERVE	.61	2	.86	3	.56	2	322
	$24.00		**$30.00**		**$36.00**		**$16,086**



Fred S. Howard

CAPE COD REBELLION IN ARCHITECTURE is won by Subdivider Cluett and Architect Peterson. Their five-room Modern houses shocked local traditionalists, but justified a hunch that they would rent for $60, eventually sell for $6,000. Modern helps achieve wide design variations in standardized construction.

Daring indeed is an architect who today would suggest that a Nazi client build a house of Tudor English design. Almost as daring is George B. Cluett II owner and speculative builder of ten Modern houses in that hotbed of Colonial tradition—Cape Cod. But, Builder Cluett, a firm believer in Modern's amenities, knew what he was doing and has amply justified his rebellion against clapboards, gables and picket fences: all ten of the $6,000 houses were rented at $60 to $65 per month as soon as the paint was dry.

Cape Cod. Along with his shirt-making relatives in Cluett Peabody & Co., George B. Cluett II's home town is Troy, N. Y. But, after he had developed a subdivision on its outskirts with his own designs, his own contracting and his own ideas as to interior finish, he moved to Falmouth, Mass. on famous Cape Cod, there to direct the Cluett Aircraft Co., a flying school, and his newsworthy Bywater Court.

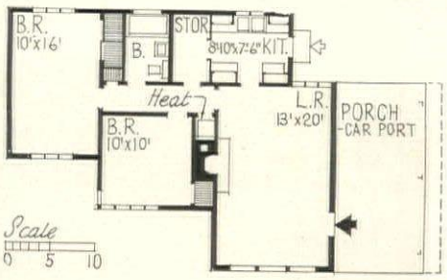
Since his family had for nineteen years owned property within sight of this flat waterfront tract, Cluett had frequently eyed it, had long considered it a likely site for a group of small houses. It measures 800 ft. along the waterfront paved street and 500 ft. deep, has another 100 ft. of sand beach on the other side of the street. Falmouth's shopping center is only a half-mile distant.

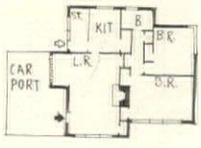
Year ago, this property was placed on the market at an undisclosed but "reasonable" figure, and Cluett snapped it up. All utilities—gas, water, telephone lines and electricity—were run into the site either underground or above ground at the rear of the tract. Gravel streets were covered with pea stone and application for town acceptance was made.

With ten speculatively built houses for seasonal or year-round occupancy, either for rent or sale, he planned to get his 40-lot project rolling. And, with Modern design, he planned to attract attention, investigate local consumer preference.

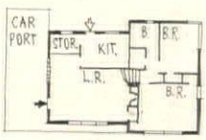
Modern. To complement his own design ideas and put them in working drawing form, Subdivider Cluett called upon young Architect Ernest Gunnar Peterson of Falmouth, an M.I.T. graduate (1929) and residential design specialist. Both men favored Modern design because they felt that it afforded more space for the money and they knew that it lent itself to more interesting and abundant fenestration,

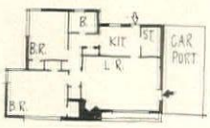


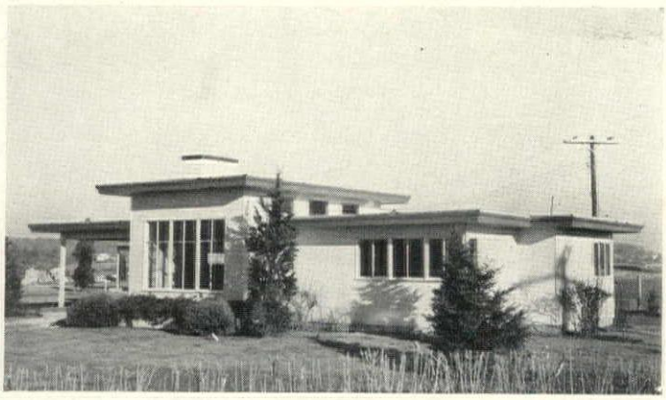


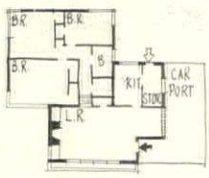




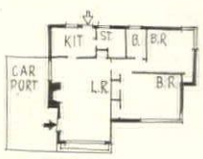


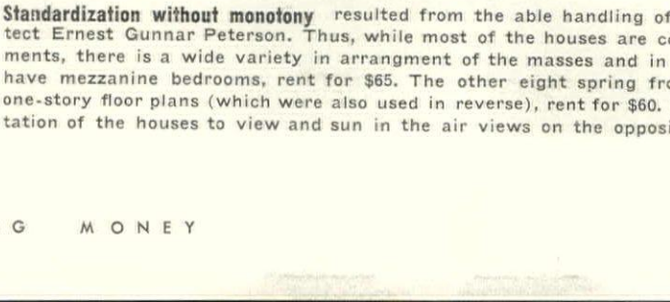


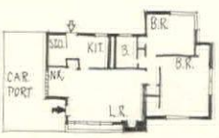












more variety of mass and more efficient use of new building materials. The accompanying photographs bear out their convictions.

For economy's sake, all houses are quite similar in design—eight of them spring from four sets of plans which were used in reverse. However, variations in the masses of the houses and their fenestration makes detection of the standardization difficult. Use of three color combinations also made for individuality: 1) white with red trim, 2) cream with green, 3) light yellow with light blue.

All houses are basementless and have the same number and type of rooms—living-dining room, kitchen, utility closet, two bedrooms and bath. Living room boasts unusually high ceilings (10 ft.) permitting the use of small auxiliary clerestory windows. Large triple-sash windows dominate the south and west facades which command a view of the water. (Note the studied orientation of the houses in the air view, left.) Also noteworthy are the room dimensions which are unusually generous for houses in the $6,000 price class—13 and 14 x 20 and 21 ft. living rooms, 10 x 16 ft. master bedrooms, 10 x 12 ft. secondary bedrooms. While all walls are finished on the interior with painted plaster or natural plywood paneling, the roof rafters and plywood sheathing above are left exposed, painted. Porches may be used as carports during Falmouth's frequently inclement weather.

Ground was broken on October 7 coincident with the perfection of the foundation plans, and the ten houses were completed between January 1 and mid-March.

Traditionalists. Interesting commentary on the public acceptance of Modern architecture is the fact that all of Cluett's tenants (mainly officers in training at nearby Camp Edwards) are unanimously pleased with interior appointments and living qualities of the precedent breaking houses. Several, however, have indicated that they would be better pleased with traditional exterior design. Also interesting is the fact that the wave of local criticism engendered by the rebel design of the individual houses

Standardization without monotony resulted from the able handling of Modern design by Architect Ernest Gunnar Peterson. Thus, while most of the houses are comprised of the same elements, there is a wide variety in arrangment of the masses and in fenestration. Two houses have mezzanine bedrooms, rent for $65. The other eight spring from four slightly different one-story floor plans (which were also used in reverse), rent for $60. Note commendable orientation of the houses to view and sun in the air views on the opposite page and on page 448.





LIVING ROOMS



Fred S. Howard Photos

receded conspicuously when they progressed from the construction stage into a finished and unified project.

Not so easily swayed were Falmouth's conservative financiers and the district FHA officials. After considerable argument over the market value of Modern houses in a Colonial community, Cluett was able to cover 70 per cent of his construction costs, including landscaping and roads, with sixteen-year 5½ per cent mortgages written by local savings and loan associations and cooperative banks. While this was at least a moral victory, all negotiations for FHA insurance proved fruitless as far as the rental project is concerned. However, indication is that FHA may insure the mortgages if and when the houses are sold to owner occupants. Probable price: $6,000, complete with stove and refrigerator.

Until that time comes, Owner George B. Cluett II will content himself with a gross rental intake of $7,320 per year—ample proof that Modern housing may be financially as well as esthetically attractive.

CONSTRUCTION OUTLINE

FOUNDATION: Poured concrete. Waterproofing—membrane and asphalt.
STRUCTURE: Exterior walls—2 x 4 in. frame, ½ in. resin bonded plywood; inside —¼ in. plywood. Floor construction—concrete covered with ¾ in. oak block, E. L. Bruce Co.
ROOF: Covered with light asphalt, Vaporseal, Celotex Corp. and cap sheet roofing, Bird & Son.
FIREPLACES: Heatilator Co.
SHEET METAL WORK: Flashing—lead. Ducts—Armco galvanized iron, American Rolling Mill Co.
INSULATION: Outside walls—1 in. Balsam wood, Wood Conversion Co.
WINDOWS: Sash and screens—steel, Fenestra, Detroit Steel Products Co. Glass—single double strength, quality B.
FLOOR COVERINGS: Kitchen and bathrooms—linoleum on concrete slab.
WALL COVERINGS: Kitchen and bathrooms—Monowall, Armstrong Cork Co., Inc.
HARDWARE: Brass, P. & F. Corbin Co.
PAINTS: By E. I. Du Pont de Nemours Co., Inc.
ELECTRICAL INSTALLATION: Wiring system—BX and Simplex. Fixtures — Chase Brass & Copper Co. and Service Electric.
KITCHEN EQUIPMENT: Range and refrigerator—Norge Corp.
BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Cabinets —Columbia Metal Box Co.
PLUMBING: Soil pipes—cast iron. Vent and waste pipes—galvanized steel. Water pipes —copper, Streamline, Mueller Brass Co.
HEATING: Gas fired conditioned air system, vertical type, Bryant Heater Co. Thermostat — Minneapolis-Honeywell Regulator Co. Water heater—gas fired, 28 gal., Norge Co.

PRIVATE SLUM CLEARANCE DAWNS

in New York State as Urban Redevelopment Corp. Law is passed. Brightest rays of hope: tax limitation and power of condemnation.

Egged on by planners and business men alike, the Governor of New York month ago put his "Herbert Lehman" on the Urban Redevelopment Corporations Law, opened to private enterprise the Government-guarded door to slum clearance. The first of its kind on U. S. statute books, this significant law authorizes private companies to acquire slum properties by condemnation, to remodel or replace them, and then to operate the project with taxes pegged at their original level. No specific projects are under way as yet, but land poor savings banks and insurance companies as well as investors and slum property owners are individually and collectively studying the law's mechanics, are considering the problem of how, when and where to strike.

Three Tries. Enactment of the Urban Redevelopment Corporations Law proves the virtue of perseverance and the adage that "the third time is a charm." Back in 1938 the Chicago building industry cooked up a similar proposal involving the creation of "Public Service Building Corporations." But it died an untimely death at the hands of the Illinois law makers. Before Chicagoans had doffed their mourning bands, New York City's Merchants' Assn., a live-wire but misnomered Chamber of Commerce, had revived the idea, dressed it in new clothes and submitted it to the 1940 legislature.

All went well until Gov. Lehman called for advice from two of his lieutenants. New York City's Mayor LaGuardia, the jack of all municipal trades, thought that the sponsors of the law had been too hard on themselves by providing, among other things, that after the ten-year pegged tax period the corporations pay to the city a special tax equal to half of all profits in excess of 5 per cent of equity. He suggested that the special tax would only complicate the tax collector's job, that it be forgotten altogether. He also suggested simplification of the provisions for supervision of redevelopment corporations. New York State's Housing Commissioner Edward Weinfeld was worried about the proposed law's lack of any provision for the care of families displaced by redevelopment projects. Result of this double barreled advice: While Lehman announced that he favored the bill's principles, he promptly vetoed it.

Back to work on his ill-starred law went Chairman Thomas S. Holden of the Merchants' Special Committee on Slum Redevelopment. In between tricks at his presidential post in the F. W. Dodge Corp., the building industry's figure factory, Holden ironed out the official objections to the proposals, made a few other changes which perfected it considerably. The altered proposal sailed through the 1941 Legislature, came from Gov. Lehman's desk accompanied by a memorandum stating: ". . . . It should be helpful in our efforts to reclaim slum areas. . . . If we are to do the job properly, a means must be found for bringing private enterprise with its huge resources to this task. . . . Furthermore, the rebuilding of our cities affords a great opportunity of cushioning the effect of any slump which may follow the defense emergency. This bill may prove to be a proper vehicle to accomplish that purpose. . . . The bill is approved." This, despite the belief of Housing Commissioner Weinfeld and many another public houser that the bill still had its "deficiencies"—among them the 5 per cent limit on the earnings of the redevelopment corporations. (Many professional housers arbitrarily hold that slum clearance and profits are incongruous.)

Mechanics. The Urban Redevelopment Corporations Law is not a housing measure, except in its incidental implications. Thus, the new corporations are empowered to clear, replan, rehabilitate and reconstruct any sub-standard and unsanitary urban areas whether they are comprised of industrial, commercial or residential buildings or combinations of all three types. To be chartered by the State, these corporations may develop only one project each, may raise the necessary funds by mortgaging their property, by issuing bonds secured by mortgages and by selling income debentures and stock. In any event, their capital structure will be subject to the approval of a public supervising agency, as yet undetermined.

To encourage the formation and operation of redevelopment corporations, the law sets forth several pieces of attractive bait:

► It authorizes cities, by local legislation, to exempt from local real estate taxes for a decade any value which a corporation may add to its real property. This will give the corporation an opportunity to prove its earning power and make a start toward amortizing its indebtedness before taxes are increased. It should work no hardship on the community, for, since most slum areas are tax delinquent, it will probably collect more taxes during the exemption period than previously. This tax limitation provision is similar to the special tax arrangements frequently used to entice new industries to small communities. As an assurance that the corporations will prepare themselves for the fateful day at the end of the ten years' tax grace, the law requires that they establish a yearly reserve equal to 20 per cent of the difference between the first year's tax and the tax that would have to be paid were it not for the partial exemption.

► To enable the corporations to secure control of enough property to make large scale redevelopment operations feasible, the law permits them to resort to condemnation once 51 per cent of the property (by both area and assessed valuation) in a certain project area has been secured by option or purchase. This proviso will simplify property acquisition where the area is subdivided into many small parcels and where titles are cloudy and defective. It will also combat the action of stubborn property owners who might otherwise hold up the redevelopment of a substandard area either by their desire to stay put or to hold out for an unduly high sales price.

► Other inducements, while not written into the law, are implicit in it: 1) changes in local zoning ordinances and maps and in street layouts to facilitate the proper development of a project, 2) provision and maintenance of various public facilities by municipalities, 3) purchase or maintenance of recreation and park areas by the cities.

In return for these inducements, the State has ruled that all corporations must submit their proposed projects for the approval of local planning commissions and that their financial and management setups be approved by local supervisory agencies—probably the Board of Estimate in New York City. Moreover, the Law sets the maximum permissible dividend to corporation stockholders at 5 per cent of the development cost of a project less all interest payments. Rents are not limited, for the law covers industrial and commercial redevelopments as well as housing projects.

To be judged by the local planning com-

(Continued on page 54)

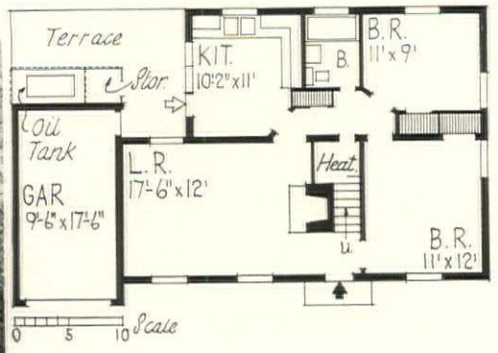


Wide World

Official approvers of the Urban Redevelopment Corp. Law last month bent to their groundbreaking task at the site of the first New York State financed housing project: (left to right) Housing Commissioner Weinfeld, Governor Lehman, Mayor LaGuardia.

CONCRETE FROM WASTE PEA GRAVEL involves less water, less weight, less time, less worry, less money. Contractor Walsh converts a headache into a new material, proves it in a Long Island subdivision. Side show: a new heating system.





John Gass Photos

A smart idea hit Contractor John L. Walsh two years ago. Now tangible in the form of ten poured concrete houses at Northport, N. Y., it promises to benefit both the cement and building industries. Through the utilization of grits, a waste segregation in sand and gravel screening, Walsh has "invented" a new concrete, Gaelicly called Walshcrete, whose dryness, light weight and low cost may bring poured concrete housing down to economic practicability, consequent popularity. Invited to open house last month in Northport, FHA officials approved its construction system, have indicated subsequent approval of its sideshow—a unique heating system featuring one continuous fin-type radiator.

Walshcrete. Measuring ¼ to ⅜ in. in diameter, grits are too large for sand, too small for gravel, had always been commercially worthless according to accepted construction standards. Like many sand and gravel pit operators, Walsh often had pondered grits' possible use, meanwhile dumped them into Long Island Sound. He had also pondered the problem posed by the segregation of concrete's components which frequently takes place between its mixing and setting. Both problems were licked with the development of Walshcrete: grits are its major ingredient; segregation is intentional.

Composed of 2½ to 3½ bags of cement, a couple of buckets of water and the remainder grits, one cubic yard of Walshcrete weighs about 25 per cent less than regular concrete, costs only one-half as much. Moreover, since the grits are held together by only a thin film of cement, air voids in the walls approximate 30 per cent, provide good insulation. And the small volume of water lessens the danger of cracks during the setting period. Unlike concrete, Walshcrete is so dry it pours like granulated sugar, is easily handled, speeds up production by permitting the stripping of forms in twelve hours—about half the time required for concrete. Finally, the presence of voids in the wall cuts down capillary action, eliminates much of the dampness in ordinary concrete walls. Compared to wood, Walshcrete has the same advantages as concrete: It is stronger, more-fireproof, and soundproof, offers better insulation and better protection against termites and rats.

Weaker than concrete and more brittle, Walshcrete was found not to be adaptable to large structural work with complex stresses. However, since its physical properties are more than adequate for loads encountered in buildings up to three stories high, its characteristics appeared admirably suited to low cost housing.

With these conclusions in mind, Walsh forthwith began construction of ten simple four-room Walshcrete homes.

Construction. Nestled in an outlying section of Northport (pop. 3,500), Walsh's houses give valid proof to his conclusions. Except for the roof, each house is completely poured—even its 3 in. partitions and chimney. Footings and walls are one piece, reenforced by horizontal ⅜ in. bars above and below the windows. All window frames and door jambs are solidly anchored to the Walshcrete. Felt separates the reenforced ceiling slab from the walls to protect them from the slab's expansion and contraction.

Exterior application of a white prepared cement finish gives each house a clean-cut appearance. Rough interiors are furred out with ribbed wire lath, then plastered, the air space between the Walshcrete and plaster providing additional insulation. (In future houses, Walsh proposes to use the lath as the inside form in the pouring of exterior walls.)

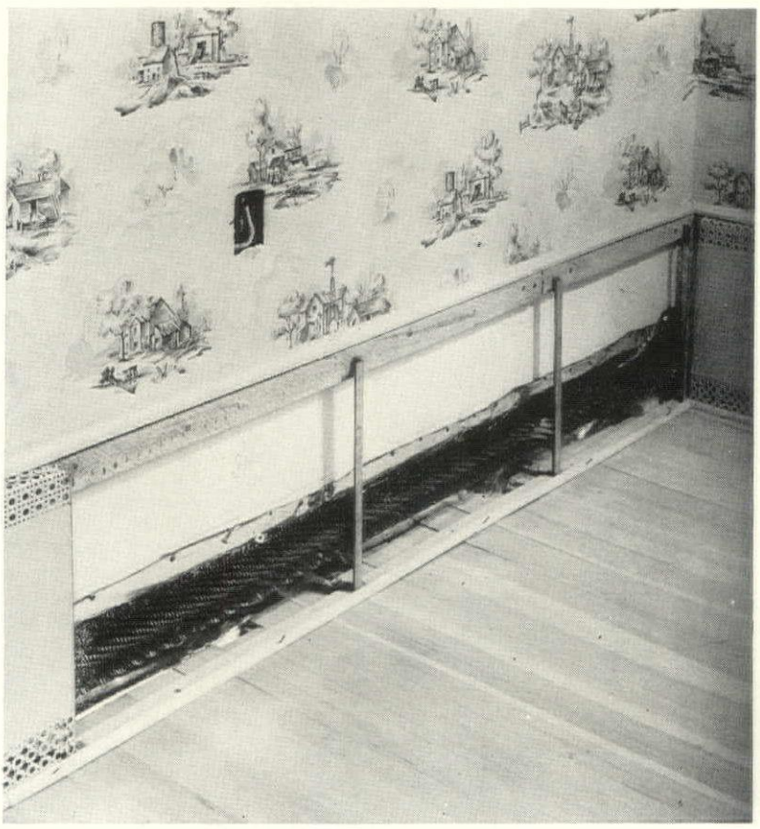
During his sixteen years prior experience in concrete construction, Contractor Walsh had handled some 500,000 yds. of the material, had built, among other projects, Long Island's Floyd Bennett Airport and had learned a trick or two adaptable to small house construction. Thus, using a ten-man gang composed of an electrician, a plumber, three carpenters and five day laborers, he was able to build the foundation and shell in one working week, to finish the house completely in three weeks. Compared to industralized prefabrication standards, this erection time is not fast, but it is much speedier than conventional concrete construction. Walshcrete gets the credit for such speed. Its extreme dryness, light weight, easy handling and setting qualities, decrease shoring and tamping, lessen labor and costs.

Herewith a chapter from Walsh's construction diary: Monday—excavation and erection of footing forms; Tuesday—placing of condiuts and rough plumbing and floor slab pouring; Wednesday and Thursday—form erection for walls and ceiling slab; Friday—pouring; Saturday—stripping of forms, erection of gable and chimney forms and pouring, erection of pre-cut roof rafters and sheathing. Significantly, one set of forms, once made, can serve for the pouring of at least 25 houses.

Heating system. Faced with small housing's perennial problem of providing inexpensive even heat, yet saving much needed space, Walsh has made another significant contribution with the ingenious installation of a circuit heating system. Developed and marketed by a friend, it is based on the



Strata in a Walshcrete wall indicate the dryness of the new material—ordinary concrete seeks a level when poured. Note that even the chimney and the attic floor are poured. Roof frame is hidden with reflective insulation. Attic space, already semi-finished is easily converted into extra rooms.

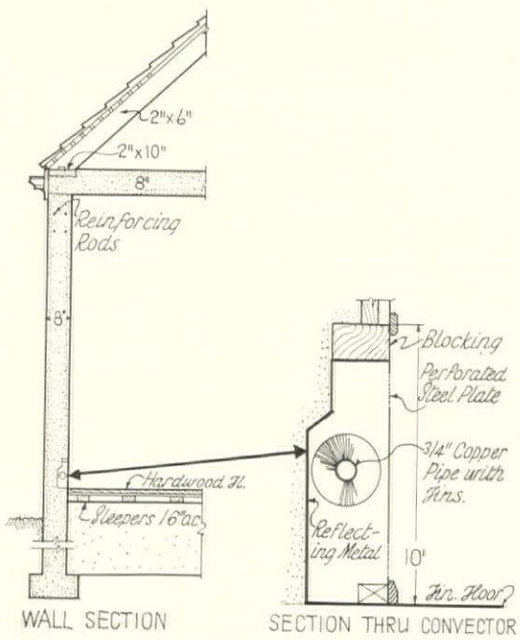


principles of the familiar continuous circulating hot water radiation system. But its application differs markedly. The radiating element in the circuit is a length of ¾ in. copper pipe running around the exterior walls of all first floor rooms. It is covered with 1½ in. extending fins, which offer 3 sq. ft. of radiating surface per linear foot. Peculiarly suited to poured concrete or Walshcrete construction, the "radiator" is installed in a 3 in. formed recess at the base of the wall about 2 in. above the floor level and is backed by reflective insulation.

Oil fueled, the heating unit in a central closet also acts as a domestic hot water heater. With outside temperature below freezing, heat transfer tests on the system proved it capable of raising the house temperature 10° per hour. Fuel is consumed at an rate of ½ gal. per hour, and Walsh estimates the total heating and domestic hot water costs in a Northport house at about $85 per year.

Sales and finance. Though Contractor Walsh belittles his salesmanship, all of the completed Northport homes have been sold profitably at $4,400—by himself. Financed through New York City's enterprising First Federal Savings and Loan Assn., purchases involve moderate total monthly charges of $32, including taxes and insurance.

In planning future building, Walsh predicts that with a 25-house project, a separate sales organization, production on his gang-pouring basis, total price of the same house should be shaved to $3,400. Also in his briefcase are pending patents on Walshcrete, plans for licensing its nationwide use, designs for a smaller $2,200 house to be completely poured—even its low pitched roof. And, on the basis of his performance so far, Contractor John L. Walsh is not talking through his briefcase.



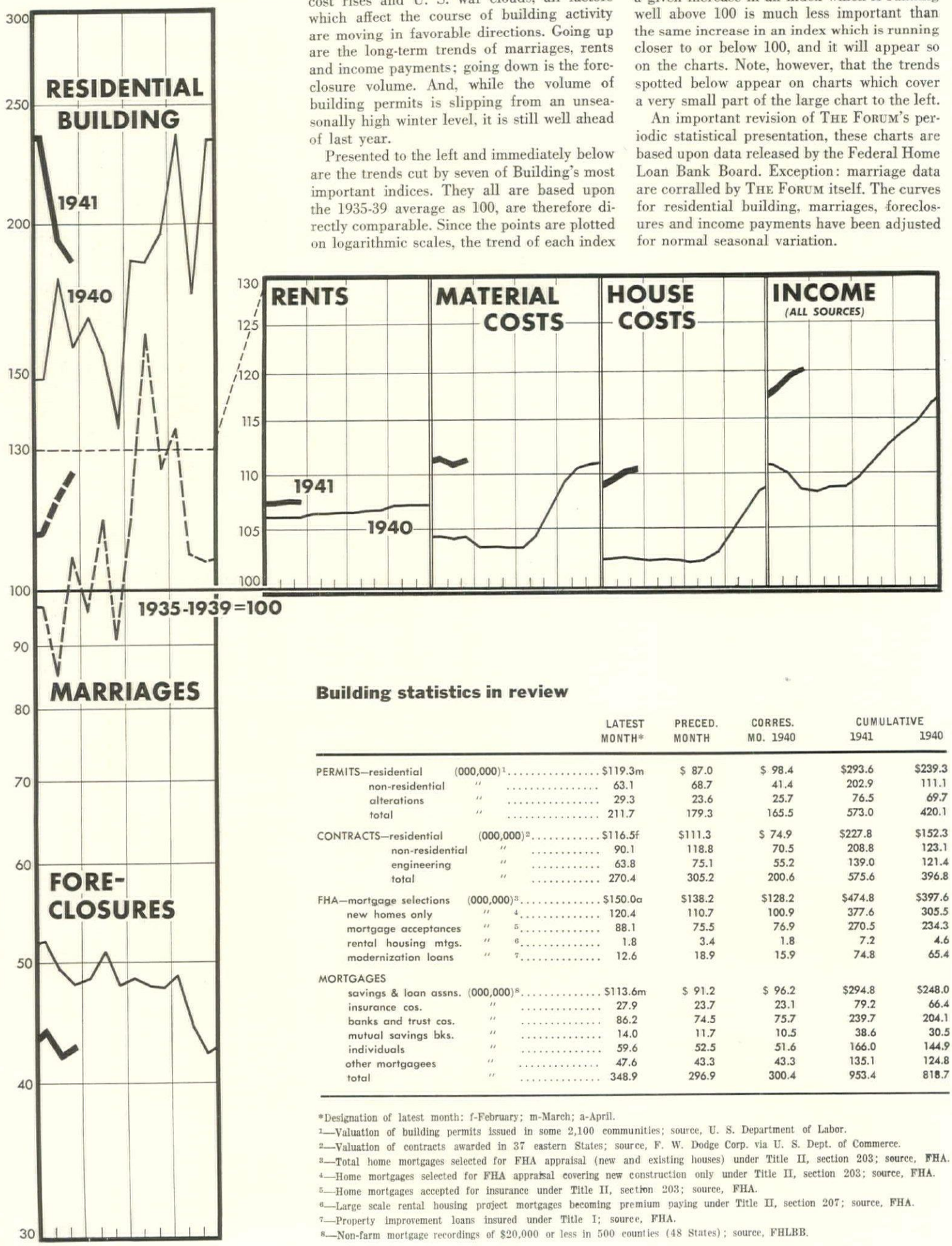
Heating system: Hot water from a central oil-fired boiler circulates around the perimeter of the house at the floor level in a ¾ in. finned copper pipe. Thus two walls of every room (except bath) boast a continuous radiator. Radiating surface: 3 sq. ft. per lin. ft. Total water capacity of boiler and radiator: 15 gal. Furnace is by Timken. Radiator is by Tilco-fin, Inc.

BUILDING'S CHARTS AND STATISTICS spotlight rising costs.

With the important exceptions of threatening cost rises and U. S. war clouds, all factors which affect the course of building activity are moving in favorable directions. Going up are the long-term trends of marriages, rents and income payments; going down is the foreclosure volume. And, while the volume of building permits is slipping from an unseasonally high winter level, it is still well ahead of last year.

Presented to the left and immediately below are the trends cut by seven of Building's most important indices. They all are based upon the 1935-39 average as 100, are therefore directly comparable. Since the points are plotted on logarithmic scales, the trend of each index is more accurately related to the others. Thus, a given increase in an index which is running well above 100 is much less important than the same increase in an index which is running closer to or below 100, and it will appear so on the charts. Note, however, that the trends spotted below appear on charts which cover a very small part of the large chart to the left.

An important revision of THE FORUM's periodic statistical presentation, these charts are based upon data released by the Federal Home Loan Bank Board. Exception: marriage data are corralled by THE FORUM itself. The curves for residential building, marriages, foreclosures and income payments have been adjusted for normal seasonal variation.



Building statistics in review

		LATEST MONTH*	PRECED. MONTH	CORRES. MO. 1940	CUMULATIVE 1941	CUMULATIVE 1940
PERMITS—residential	(000,000)[1]	$119.3m	$ 87.0	$ 98.4	$293.6	$239.3
non-residential	"	63.1	68.7	41.4	202.9	111.1
alterations	"	29.3	23.6	25.7	76.5	69.7
total	"	211.7	179.3	165.5	573.0	420.1
CONTRACTS—residential	(000,000)[2]	$116.5f	$111.3	$ 74.9	$227.8	$152.3
non-residential	"	90.1	118.8	70.5	208.8	123.1
engineering	"	63.8	75.1	55.2	139.0	121.4
total	"	270.4	305.2	200.6	575.6	396.8
FHA—mortgage selections	(000,000)[3]	$150.0a	$138.2	$128.2	$474.8	$397.6
new homes only	"[4]	120.4	110.7	100.9	377.6	305.5
mortgage acceptances	"[5]	88.1	75.5	76.9	270.5	234.3
rental housing mtgs.	"[6]	1.8	3.4	1.8	7.2	4.6
modernization loans	"[7]	12.6	18.9	15.9	74.8	65.4
MORTGAGES						
savings & loan assns.	(000,000)[8]	$113.6m	$ 91.2	$ 96.2	$294.8	$248.0
insurance cos.	"	27.9	23.7	23.1	79.2	66.4
banks and trust cos.	"	86.2	74.5	75.7	239.7	204.1
mutual savings bks.	"	14.0	11.7	10.5	38.6	30.5
individuals	"	59.6	52.5	51.6	166.0	144.9
other mortgagees	"	47.6	43.3	43.3	135.1	124.8
total	"	348.9	296.9	300.4	953.4	818.7

*Designation of latest month: f-February; m-March; a-April.

1—Valuation of building permits issued in some 2,100 communities; source, U. S. Department of Labor.

2—Valuation of contracts awarded in 37 eastern States; source, F. W. Dodge Corp. via U. S. Dept. of Commerce.

3—Total home mortgages selected for FHA appraisal (new and existing houses) under Title II, section 203; source, FHA.

4—Home mortgages selected for FHA appraisal covering new construction only under Title II, section 203; source, FHA.

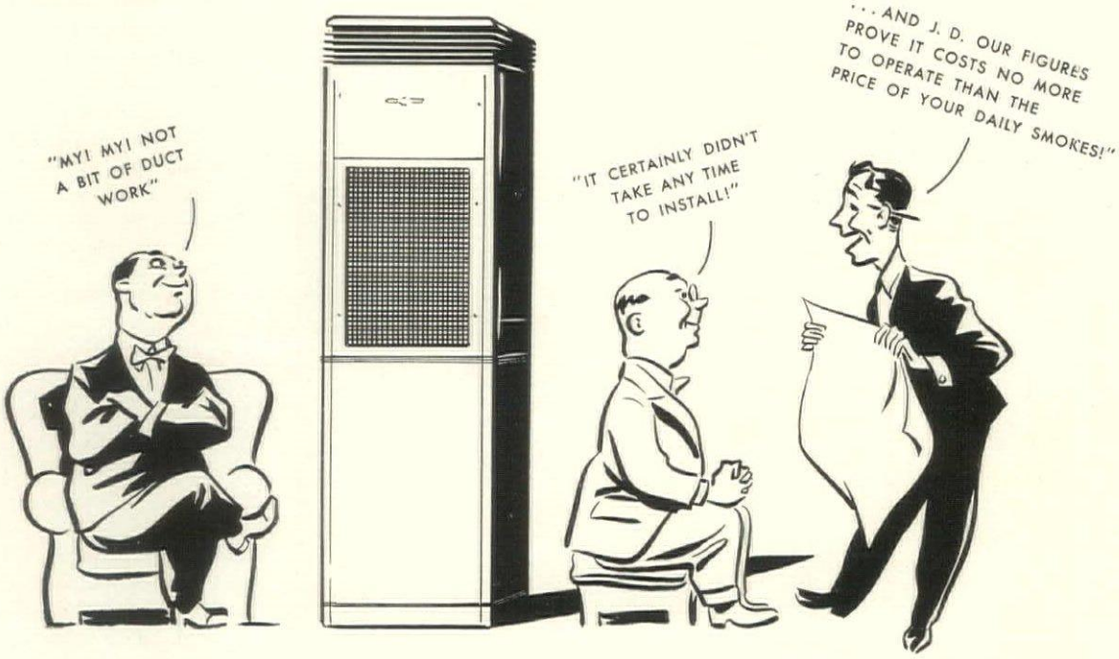
5—Home mortgages accepted for insurance under Title II, section 203; source, FHA.

6—Large scale rental housing project mortgages becoming premium paying under Title II, section 207; source, FHA.

7—Property improvement loans insured under Title I; source, FHA.

8—Non-farm mortgage recordings of $20,000 or less in 500 counties (48 States); source, FHLBB.

Cuts air conditioning budgets to the bone: G-E *"Packaged Weather"*



Make a list of advantages of your "ideal" air conditioner for restaurants, small stores, and offices. Wouldn't they run something like this?

- Duct work must be kept to a minimum. (*G-E units use little or no duct work*).
- Must not entail extensive re-modernization. (*G-E alterations in most cases are nil*).
- Should not cost much to operate. (*G-E units operate for mere change each day*).
- Must not be expensive in first cost. (*G-E costs less than you think!*)

See Sweets' $\frac{26}{11}$ for further details or write for data to General Electric Company, Div. 613, Bloomfield, N. J.

TURN TO GE **. . . for the complete line of Heating and Air Conditioning**

(Here are three typical examples)



G-E CENTRAL PLANT EQUIPMENT

G-E *Scotch Giant* condensing units are available in a complete range of capacities for every air conditioning and commercial refrigeration need. Also evaporative condensers, direct expansion, water and steam coils.



G-E Oil Furnaces

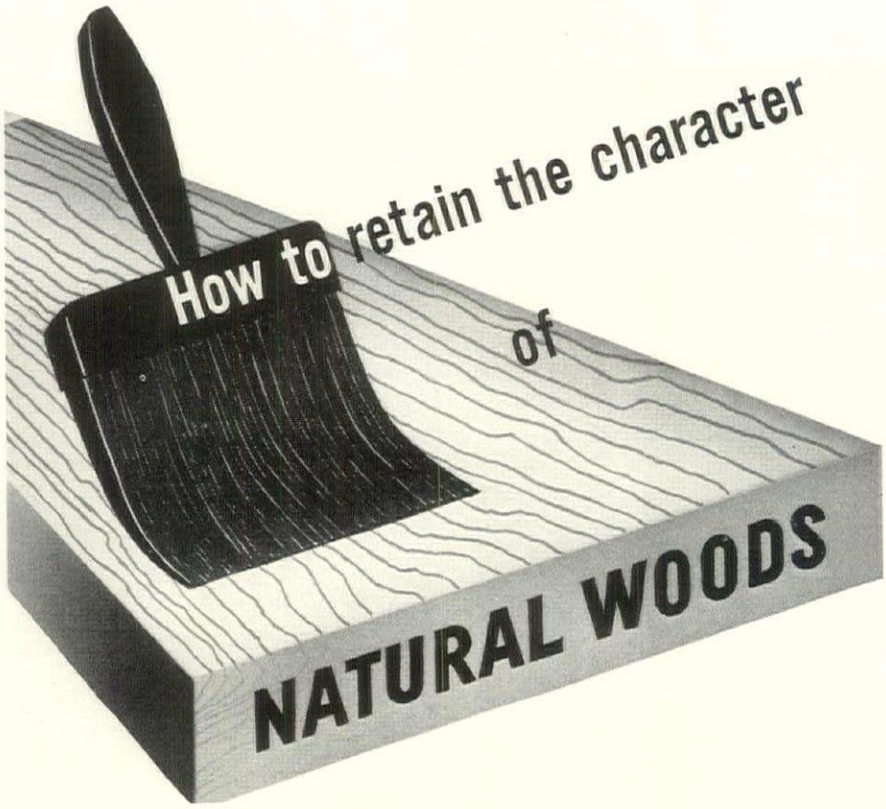
range in capacity from 75,000 to 450,000 Btu per hour, for steam, hot water, vapor. Coordinated in design, self-oiling with inverted flame impact-expansion. *GAS FURNACES* from 76,000 Btu to 1,372,000 Btu per hour.



G-E WINTER AIR CONDITIONERS

(oil or gas fired) circulate warm, clean, moistened air. Oil: 3 sizes, 100,000 to 200,000 Btu per hour. Gas: 14 sizes, 60,000 to 270,000 Btu per hour. A single switch provides summer circulation. Cooling equipment can be added.

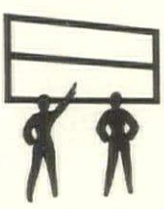
GENERAL ELECTRIC



When you specify a floor, or design that built-in bookcase, or plan those natural wood cabinets and walls, are you certain the final product will measure up in appearance? Will the wood have the character and beauty *in the home*—that it had when you planned it on paper?

The finish that makes good wood look better

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SHELLAC INFORMATION BUREAU
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(Continued from page 424)

NAZI HOUSING

Like many Americans, Germany has pondered methods of cushioning the post-war decline of industrial production. Recently, the Reich's always optimistic planners disclosed their answer: A billion dollar per year public housing program.

Operating on the thesis that a "successful" conclusion of World War II will deplete the population and that housing designed to promote large families is necessary, the Reich commissars have decreed the public construction of 300,000 three-, four- and five-room dwellings for the first post-war year. Building types will include apartments, agricultural homesteads and one-family houses. Eighty per cent of the units will be constructed from four-room plans, consisting of a kitchen-living-dining room, three bedrooms and bath.

Completely standardized and compulsory for five years, the building requirements leave nothing to creative imagination. All rooms will have minimum areas. Wall, ceiling, staircase dimensions will be fixed and specific. Tenants, selected by the municipalities and, of course, the Nazi party, will pay rentals based on their income. With an eye on possible labor shortages and higher construction costs, the Nazis plan to use blitzkrieg building methods, utilizing prefabrication, built-in equipment, new "ersatz" materials.

Strikingly similar in specific detail to the U. S. defense housing program, the German plans differ widely in scope and investment, reflect an egoistic optimism, at present peculiar to Nazi Germany. While the Reich plans 300,000 post-war homes a year at a billion-per-year expenditure, the U. S. over a two-year period will build only about 133,000 defense dwelling units, invest only $445 million. U. S. public housing agencies have spent less than $1 billion in the last decade.

Paradoxically, the Reich commissars seem not so optimistic about victorious peace as their post-war construction program indicates. Thus, the housing standards also include requirements for selection of sites away from industrial plants, low densities, the bombproofing of structures, bomb shelters—all provisions against the dangers of aerial warfare.

WANTED: 110,000 ACRES

To train in coordinated maneuvers all the companies, batteries, battalions, regiments and divisions that make up its First Army, the War Department requires a big patch of land—110,000 acres, to be exact. Finding the equivalent of a 34 x 50 mile area which meets all the requirements is no mean task. Not only must the terrain be suitable from a military point of view, but there must also be a minimum dislocation of land owners and tenants and a conven-

(Continued on page 52)

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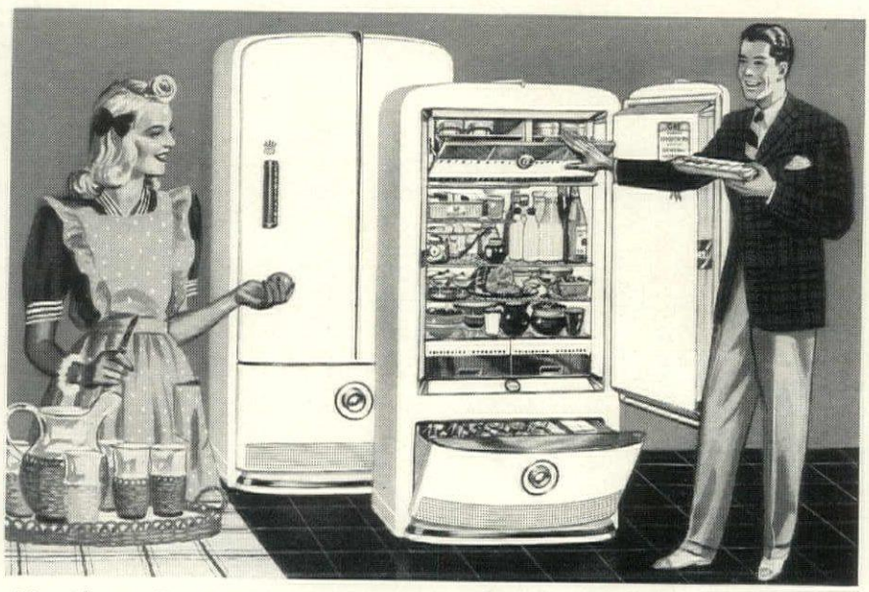
- Famous Meter-Miser Mechanism that saves on current and upkeep cost
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Choose from 6 brilliant, new Frigidaire Electric Ranges in 2 great new series!

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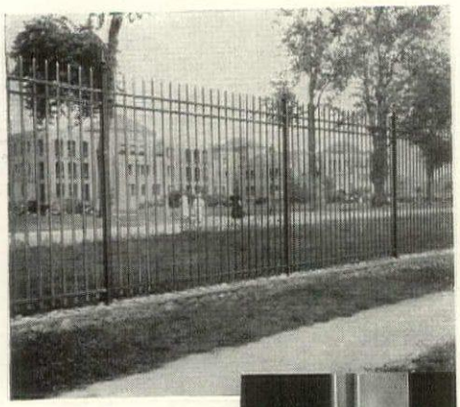
Clip this coupon, attach to your letterhead and mail to Frigidaire Division, General Motors Sales Corp., Dayton, Ohio. You'll get a complete Folder with specifications on all Frigidaire Household Appliances—Electric Refrigerators, Ranges and Water Heaters; also a complete set of "General Specifications" on Electric Refrigerators and Electric Ranges for architects, builders, and managers.

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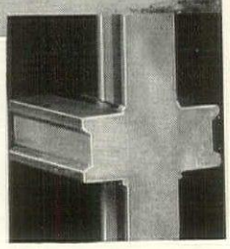
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(Continued from page 50)

ient place to rehabilitate those that must get out.

After a long search and many local surveys, the Army at mid-April found what it wanted in eastern Virginia, forthwith proceeded to buy about one-third of Carolina County in a real estate operation the likes of which are seldom seen. While County Agricultural Agent Charles B. Lanford was setting up a clearing house of information for the 4,700 families to be displaced, agents in surrounding areas were instructed to peg land prices to forestall profiteering. Meanwhile, the Army undertook a complete appraisal of the value of the land and its improvements.

Of the 70,000 acres to be acquired initially, more than 20,000 are suitable for cultivation. Where possession by the Army is necessary prior to the removal of crops, farmers will be compensated for all losses. All of the 70,000 acres, comprised of some 600 separate tracts, are expected to be in Army hands by September 1.

FACTS FROM ENGLAND

Ever since the first bombing of London by General Goering's Luftwaffe, American architects and builders have clamored for expert data concerning the actual effects of these blasts on the city's structures. A few months ago the National Technological Civil Protection Committee sent trained observers to England, recently released their findings.

Amidst a mass of facts relating in detail the tremendous and heroic servicing of England's public utilities, one message stands out:—"Earthquake construction is what you must use . . . to withstand the shock of the modern high explosive bomb." This means designing for both lateral and vertical loads, portends thicker walls, more lateral steel bracing. Other findings:

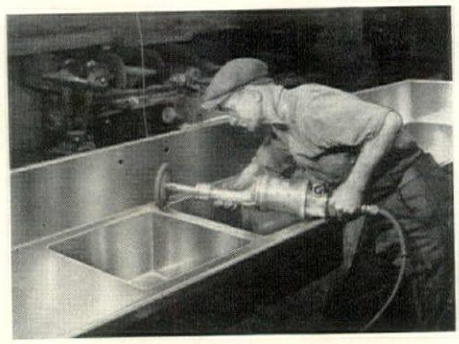
► "Blast walls" with no vertical loading, installed around expensive machinery, have proved very successful in limiting damage wrought by flying shrapnel. British experience has shown that a 14 in. brick wall gives effective protection "against quite bad blasts."

► Water facilities are carefully controlled during attacks. With the arrival of the Luftwaffe, certain London areas are "valved off." Those that are knocked out are then served by 500-gallon water carts. Water mains are frequently slung by suspension across huge craters.

► Gas utilities are pooled. All repair gangs and supplies are pooled and coordinated. When gas storage tanks are hit, gas is run straight from the producers into the pipes.

► Dispersed facilities rather than dependence on central stations has proved much more efficient.

► Deep shelters are regarded as ruinous to morale. Prolonged refuge in them produces ill health.



The Nation's workers must be fed • • •

Not the least of the tremendous responsibilities of the architectural profession during the National Defense Program is that of making adequate provision for feeding the workers of the new huge plants being built to produce ordnance equipment.

During the first months of this year we have been commissioned to design, manufacture and install . . .

JOHN VAN RANGE
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for the employees of the following plants

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Other approved projects are in planning stages in our Engineering and Designing Departments. We could undoubtedly assist you in planning food service departments for similar or any other project having such food service problems which you may have on your boards.

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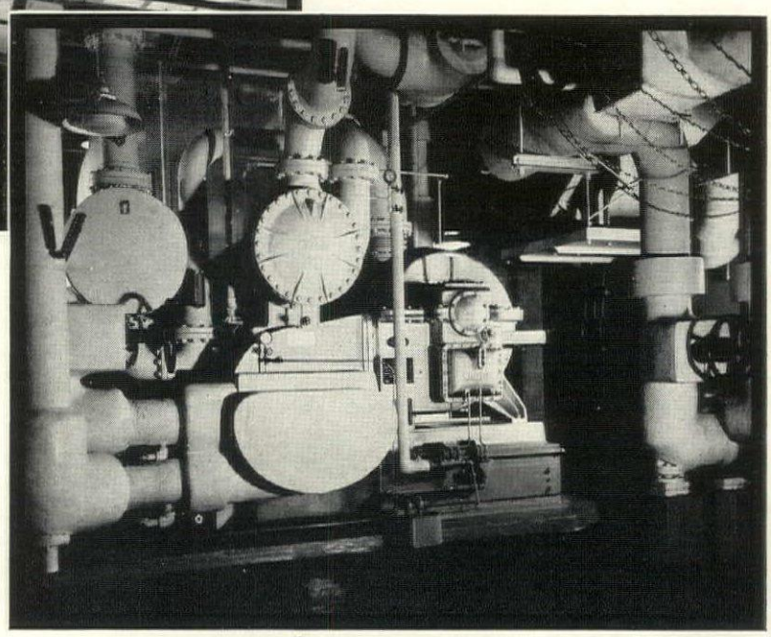
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(Above) The Air Conditioning System is so arranged that indoor temperature is automatically adjusted to conform with varying outdoor weather conditions. What's more, because the system is an integral part of the building, outlets blend harmoniously with the basic ceiling design.

(Right) Cooling for the entire 9 story building in addition to the basement is provided by this 400 ton Carrier Centrifugal Refrigerating Machine. Operated in conjunction with a large "cooling tower" located on the roof, water consumption is sharply reduced.

AIR CONDITIONING'S *First Name*— Carrier

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"Weather Makers to the World"
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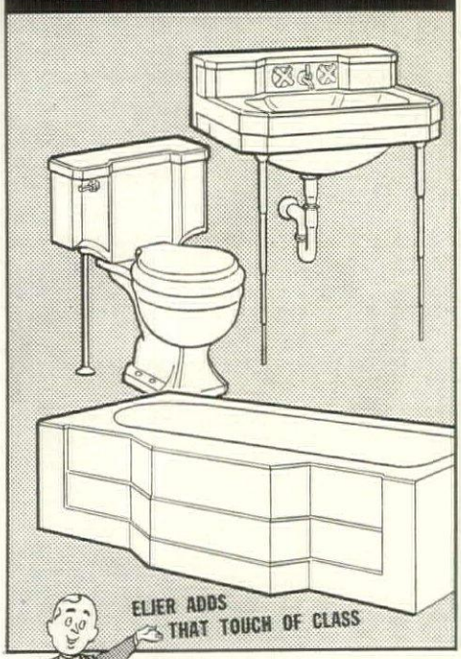
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THE ROOM THAT
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CAMDEN PLAN

(Continued from page 445)

lower than average prices.

A simpler financial set-up might be possible if the bank, insurance company or other investor assumed the entire burden now carried by Government in the Camden project. It would foot all development costs, and recoup over a long period all expenses except those for public utilities which the company might donate to the project to eliminate speculation and to permit comparatively low housing prices. As under the Government sponsored projects, State chartered mutual corporations, probably subsidiaries of the sponsor, would operate on a local basis with their resident stockholders participating in the management. Balance of the operating details in this type of project and the type involving both private and public funds (discussed in the preceding paragraph) would closely parallel those at Camden.

Significance. Again in either case, potential benefits of widespread acceptance of the private version of the Camden Plan would accrue all down the line:

► The U. S. would get some vitally needed low cost housing with all the amenities that go with large scale site planning, architectural design, production and operation.

► The building industry would gain much through the organization of large, centralized investing and management companies which could prosecute long range housing programs in an orderly fashion.

► Wealthy companies and individuals would be offered a new investment outlet which involves reasonable security, a reasonably high return.

► By participating in the mutual housing corporations, the public—particularly the average family—could avail itself of a new type of housing finance which combines the advantages of both renting and purchasing: 1) no cash down payment, 2) low monthly payments, 3) accumulation of equity, 4) incentive to maintain the property in good physical condition, 5) participation in management, 6) provision for moving readily from one size dwelling unit to another in line with changes in income and family size, 7) ability to move at will.

Even for those who would have no active part in the program, it is potentially significant. Thus, by tackling the low cost housing problem in a big way, private Camden Planners would at least partially relieve Government, and in turn the taxpayers, of much of their costly public housing program. And, where site development costs were contributed to Camden Plan projects by Government, they might well prove to be a more profitable use of relief activity than leaf-raking and its ilk. In any event, a large Camden Plan housing program could help solve the post-war production readjustment problem and help cushion the shock of economic depressions.

URBAN REDEVELOPMENT

(Continued from page 449)

mission as eligible for redevelopment, an urban area must: 1) measure at least 100,000 sq. ft.,—a little less than the average New York City block, 2) be substandard or unsanitary, and 3) be served by public facilities which are now or will be adequate for the completed project. And the redevelopment proposal must: 1) be in accord with the city's master plan, 2) "be practical and in the public interest," if it is conceived as a series of adjacent developments to be undertaken at various times, 3) involve only those zoning and street changes which are "necessary or desirable" as a blight protection and for the city as a whole, 4) be such that any displaced families may find "legal accommodations" at substantially similar rentals and that no "undue hardship" will befall them.

Unfinished business. While private enterprise now has the long-awaited green light to slum clearance, it will be many moons before slums are actually cleared. The state law merely permits municipal governments to sanction the operation of urban redevelopment corporations. Local laws must be passed, surveys made and policies formulated. Then come the checking and approval of specific redevelopment proposals.

Meanwhile, the Merchants Assn. eagerly awaits some one's willingness to guinea-pig the program. It believes that action will come first from a group of New York City savings banks and insurance companies which have acquired, much against their will, a large percentage of the properties in several local slum areas.

Chances are that the banks and insurance companies will take to the redevelopment program with greater enthusiasm than they did to the limited dividend housing programs authorized by the New York State Legislature several years ago. Only one such project has been even considered to date, and that was promptly tossed aside when the annual tax bill was estimated. The tax limitation provision in the new law may thus prove to be its backbone.

The Merchants Assn. also expects enterprising landlords, owner occupants and absentee owners of dilapidated tenements to take advantage of the law by forming corporations to modernize their own properties. And, the Association's first nibble has come from a group of investors interested in buying and redeveloping a slum block in the Borough of Queens.

Whatever the eventual effect of the Urban Redevelopment Corporations Law on the skyline of such slum-infested New York cities as Albany, Buffalo, New York City, Rochester and Yonkers, its passage is bound to foster similar legislation in other States, may herald a nationwide program of privately financed slum clearance.



Daylighted interior, Kelsey-Hayes Wheel Co., Plymouth, Michigan. Giffels & Vallet, Inc., Architects; L. Rosetti, Associate; W. E. Wood Co., Contractors.

Fenestra's STEEL WINDOW SYSTEMS

HELPED COMPLETE THIS FINE DEFENSE PLANT IN 10 WEEKS

And Effected Very Large Savings in Cost



Minneapolis-Honeywell Regulator Co., Minneapolis, Minnesota. Edmund J. Prondzinski, Architect; C. F. Haglin & Sons Co., Inc., Contractors.

A farm 10 weeks ago. Today, the completed plant pictured above! This amazing record of speed in defense construction is due, in large part, to the fact that the building—like hundreds of others elsewhere—is chiefly roofed-in window-walls, built of prefabricated Fenestra Steel Windows, delivered already fitted, assembled, even prime-painted—COMPLETE!

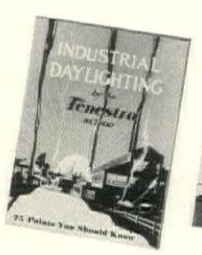
Fenestra's Steel Window Systems are helping to speed construction, and to make defense plants highly efficient at the lowest possible cost. Based on engineering research, these systems assure a particular building of ample natural light and ventilation, *before it is erected*. And they effect important savings in the cost of the building, in the cost of equipment to supply light and air, in the cost of plant operation, in the cost of protection from air raids, and in the cost of post-emergency conversion to peace-time production. In quality, Fenestra products have met the exacting specifications of the U. S. Army and Navy for many years.



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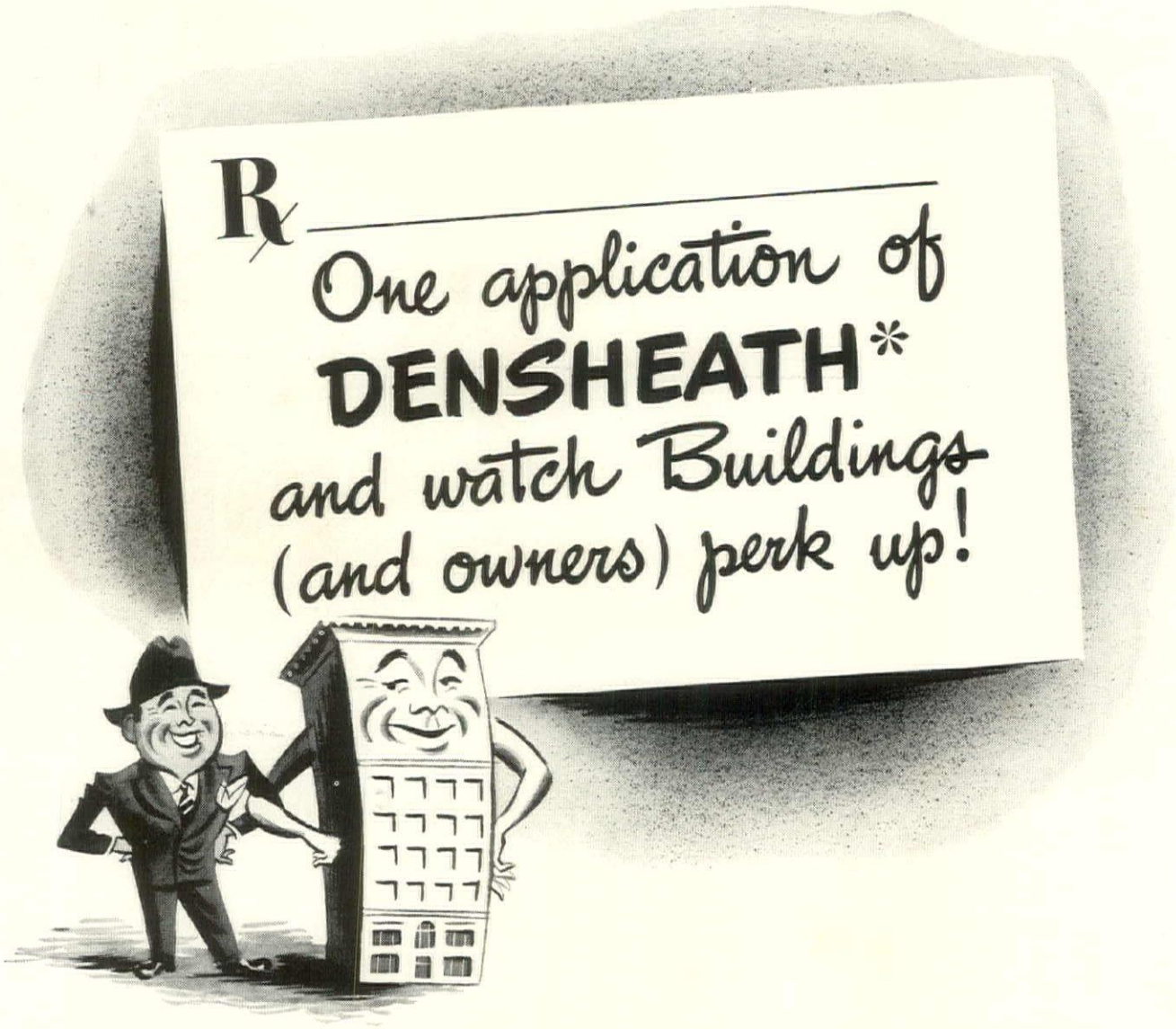
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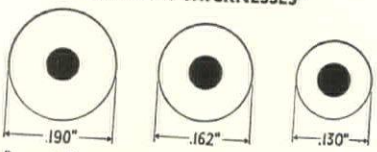
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K&M Sprayed "Limpet" combines an exceptionally high noise reduction coefficient with unlimited opportunity for architectural expression. In no sense is it geometrical. It follows the contours of curved, recessed or irregular surfaces as faithfully as plaster. Either a plain or a decorative treatment can be used. It may be given as many as ten coats of oil emulsion paint without seriously affecting its high sound absorption qualities. Only "Limpet" combines all these advantages.

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An excellent heat insulator, with a thermal conductivity of only .31 at 75°F., "Limpet" is fire-resisting and also extremely light in weight.

FREE write Dept. 23 for new A.I.A. Catalogue giving complete details on "Limpet."



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Want more information about this, and Armstrong's *Greaseproof* Asphalt Tile? Write today for the free, illustrated book—"Low-Cost Floors with a Luxury Look." Armstrong Cork Company, Resilient Tile Floors Department, 1204 State St., Lancaster, Pennsylvania.

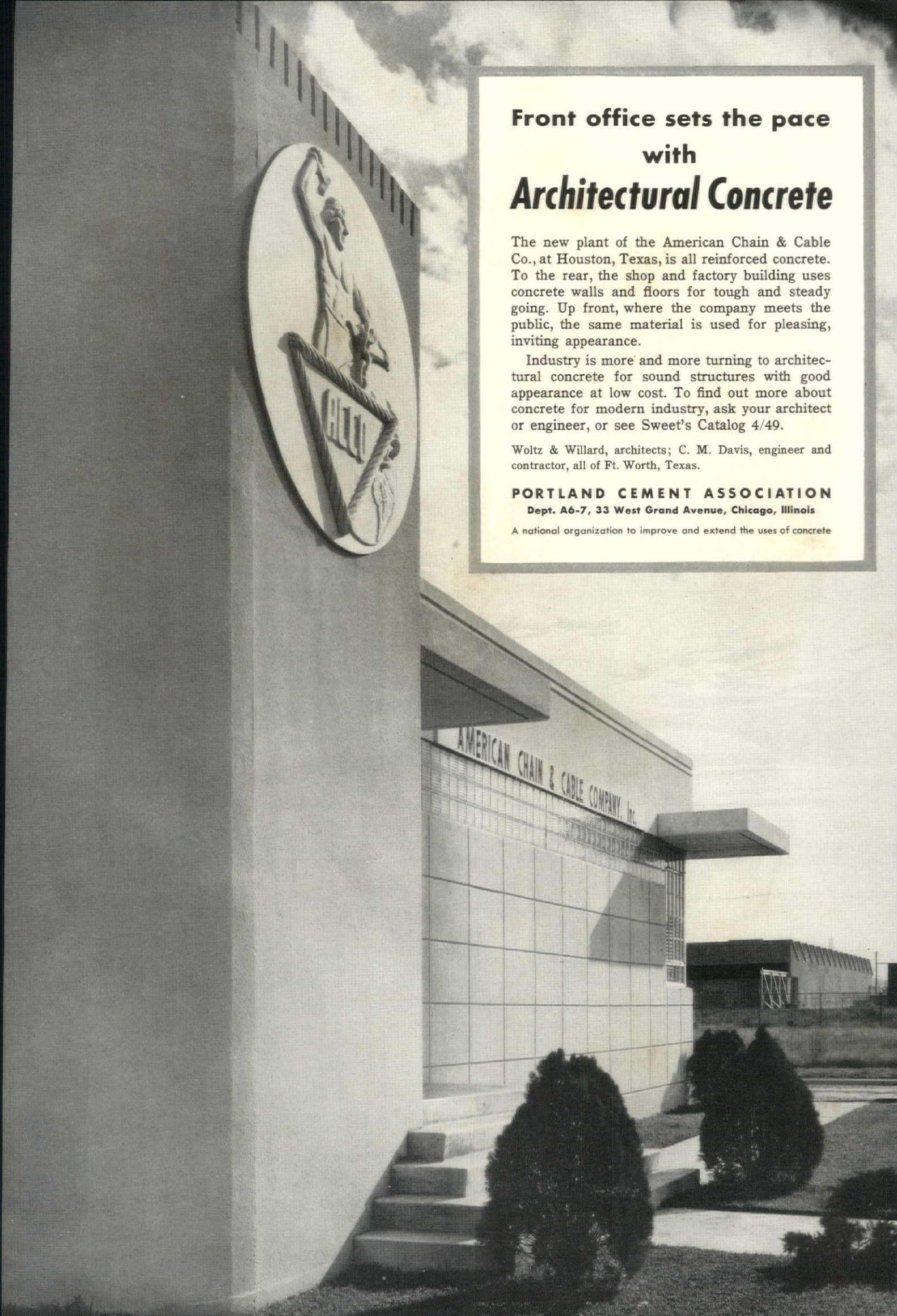
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The new plant of the American Chain & Cable Co., at Houston, Texas, is all reinforced concrete. To the rear, the shop and factory building uses concrete walls and floors for tough and steady going. Up front, where the company meets the public, the same material is used for pleasing, inviting appearance.

Industry is more and more turning to architectural concrete for sound structures with good appearance at low cost. To find out more about concrete for modern industry, ask your architect or engineer, or see Sweet's Catalog 4/49.

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ARCHITECT'S QUIZ!



HOW WOULD YOU ANSWER THESE QUESTIONS?

1 CAN INSULATION BE BLAMED FOR THE DIFFICULTIES OF CONDENSATION?

2 HOW WOULD YOU PREVENT MOISTURE ACCUMULATION IN WALLS?

3 IN WHAT WAY CAN DESTRUCTIVE CONDENSATION BE CONTROLLED?

4 WHAT SCIENTIFIC CONSTRUCTION SOLVES THE VAPOR PROBLEM?

SCIENTIFIC AUTHORITIES GIVE THE CORRECT ANSWERS

1 "In itself, insulation does not create moisture, but condensation of moisture can and does take place if conditions cause it, regardless of whether or not insulation is present."

*Scientific Section, Circular No. 560, National Paint, Varnish & Lacquer Assn., Inc., Washington, D.C.**

2 "To prevent the accumulation of moisture . . . reduce the flow through the inner portion of the wall until it is equal to or less than that through the outer portions, that is to say, the resistance must be increased by the addition of a vapor barrier." *J. D. Babbitt, Physicist, Canadian National Research Laboratories, Ottawa, Ontario.**

3 "Condensation is not a problem of insulation, but of construction, and it can be controlled by sealing the warm side of a wall, ceiling or floor, and allowing the cold side to breathe."

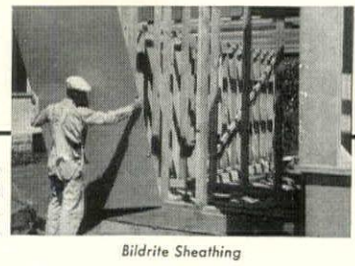
*Building Supply News—April, 1938**

4

Insulite's Approved Wall of Protection—because Sealed Graylite Lok-Joint Lath, with an asphalt vapor barrier on the stud side, effectively retards vapor travel; and Bildrite Insulating Sheathing outside permits whatever vapor that may escape the vapor barrier to pass harmlessly into the outside air.*



Sealed Graylite Lok-Joint Lath



Bildrite Sheathing

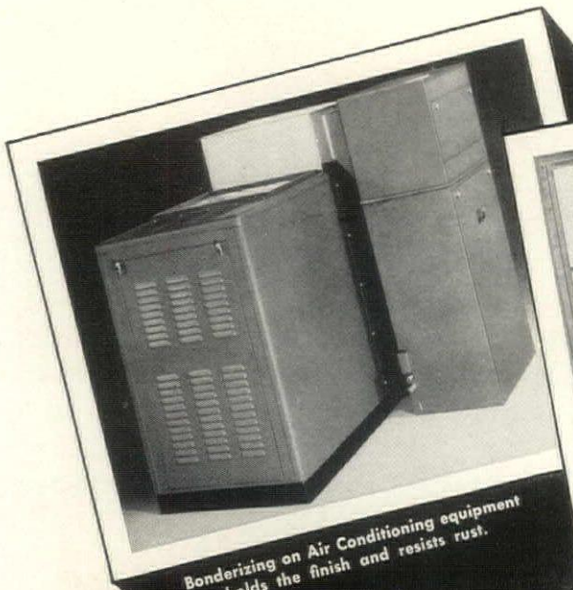
* A transcription of these and other experts' opinions on the condensation problem will be sent you on request. Address Insulite, Department AF61, Minneapolis, Minnesota.

INSULITE

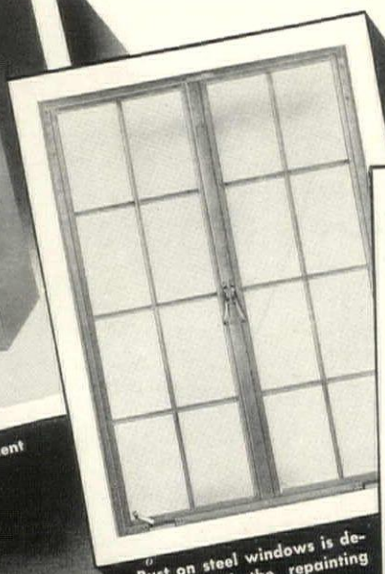
MANDO

MINNEAPOLIS MINNESOTA

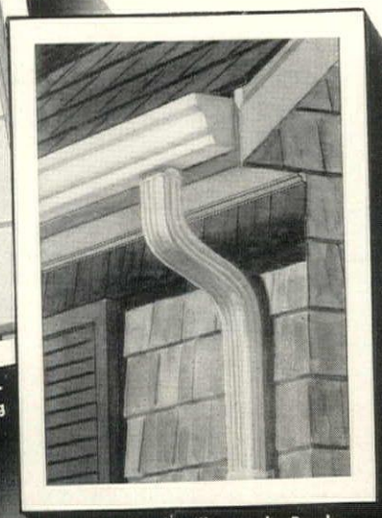
THE *ORIGINAL* WOOD FIBRE *STRUCTURAL* INSULATING BOARD



Bonderizing on Air Conditioning equipment holds the finish and resists rust.



Rust on steel windows is defeated and the repainting job reduced.

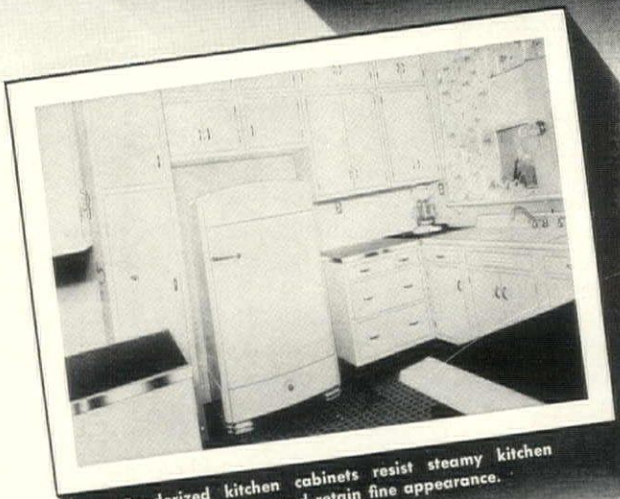


Several steel mills supply Bonderized-Galvanized sheets for flashing, metal decks and eave troughs.

Bonderizing

IS IMPORTANT TO BUILDERS

It Speeds Up Painting — Guards Against Rust — Avoids Repaint Requests — Helps Sales



Bonderized kitchen cabinets resist steamy kitchen atmosphere and retain fine appearance.

Bonderizing on Air Conditioning Units and Ducts—Steel Windows—Galvanized Sheet Metal Work—Kitchen Cabinets and many other iron, steel and galvanized units retains fine appearance longer and holds paint better. It cuts reconditioning costs because it provides an effective barrier to rust.

Products fabricated from Bonderized-Galvanized sheets may be painted immediately without aging or acid etching. Bonderizing gives the zinc surface an absorbent quality and prevents the characteristic chemical reaction between paint and zinc. Paint retains its elasticity, grips the metal, and does not crack and peel.

Bonderizing gives iron, steel and galvanized building units a new measure of protection and lowers upkeep expense. The public knows Bonderizing as a mark of quality.

PARKER RUST PROOF COMPANY
2180 EAST MILWAUKEE AVE. • DETROIT, MICH.

Send for This Book:

It gives you the information you want about Parker Processes and tells how they are serving the building industry by protecting iron and steel building materials from rust.



PARKER
Processes **CONQUER RUST**
BONDERIZING • PARKERIZING

NEW TECHNIQUE OF DAYLIGHT TRANSMISSION

Twin photographs show why INSULUX Prismatic Block provide more usable light, evenly distributed

PHOTOGRAPHIC DATA: All photos made with same camera on one film roll with sunlight brilliant. Exposures: Both pictures facing opening, 1/50 second, stop f.9. Both pictures facing rear wall, 1/50th second, stop f.5.6. All prints given same exposure in printer. No retouching.

THESE photographs tell better than words that INSULUX Prismatic Block offer architects a new technique of using natural light—economical *re-direction and distribution* of daylight for even lighting, without glare.

All photographs were made in pairs 1 minute apart, at 1 p.m., April 9, 1941, at latitude of 40° north. Wall opening 5.5 per cent of floor area.

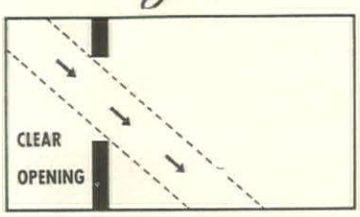
The comparison is striking — INSULUX Prismatic Block vs. a free, unglazed opening, which obviously admits maximum available light. Yet note the better lighting on rear and side walls when INSULUX panel is put in opening.

The principle is simple: Refraction of natural light upwards to a reflective ceiling, plus diffusion for even distribution. No system of louvers, reflectors or baffles are as all-around efficient and as permanently economical as INSULUX Prismatic Block.

Panels of No. 351 Prismatic Block above eye level, with No. 350 No-Glare Block below eye level, can be used on any exposure without glare.

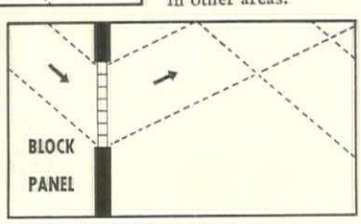
INSULUX Prismatic Block logically solve the problem of ample, usable daylight in industrial plants, offices, or any large interior. Owens-Illinois Glass Company, Insulux Division, Toledo.

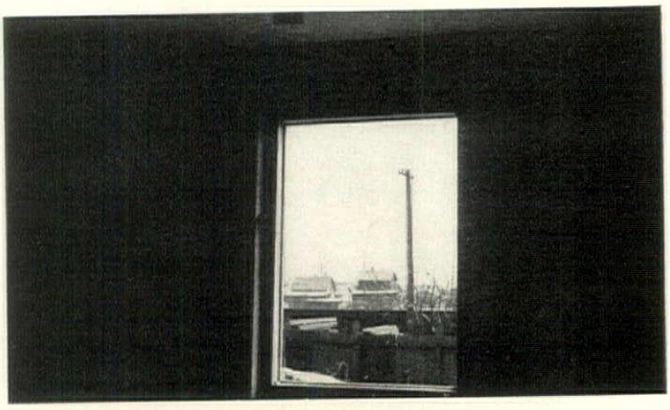
OWENS-ILLINOIS
INSULUX
Glass Block



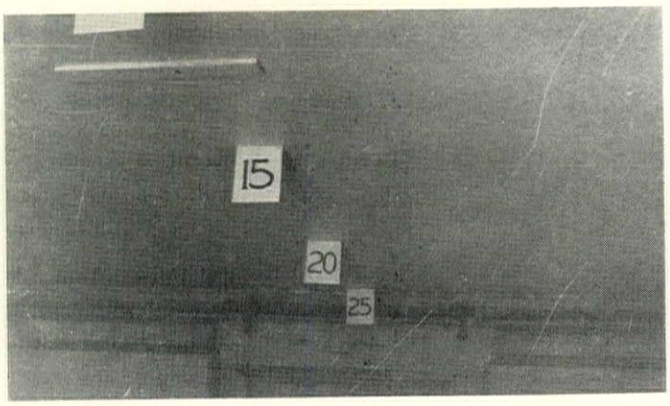
Drawing at left shows path of direct light through free opening —downward to floors, which absorb up to 85%. Direct sunlight would make shading necessary to avoid glare near opening, comparative darkness in other areas.

Drawing at right shows path of direct light through INSULUX Prismatic Block — upwards to ceiling, which reflects up to 85%. Diffusion spreads light horizontally. No-Glare Block would be used in panel below eye level.





Sole opening in 23 x 25 room is free, without glass. Little light on ceiling or nearby wall.



View towards rear wall with opening free. Note lack of wall detail, poor light on last card.

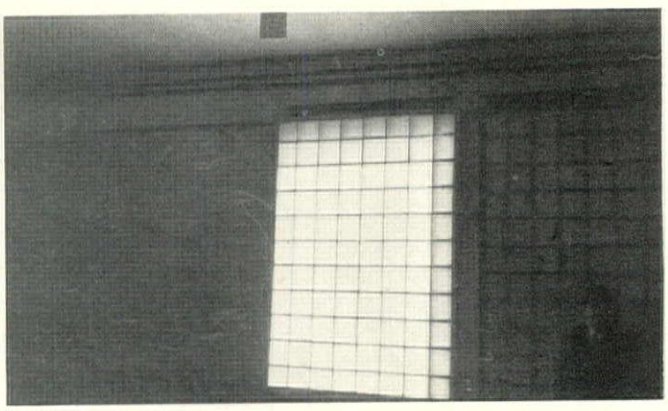


Photo taken 1 minute after top picture, with INSULUX Prismatic panel in place. Note man at right, present but not visible in top photo. Faintly visible, right, is extra test panel hung on wall.

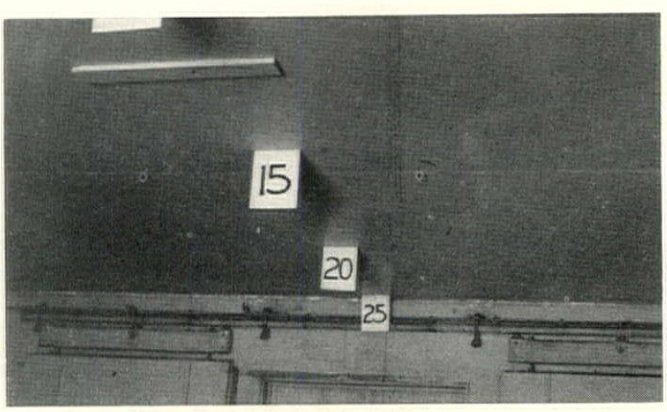
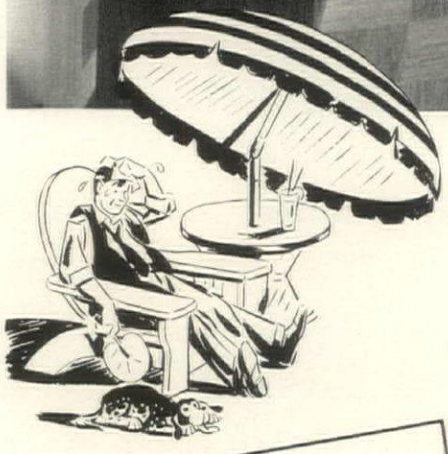


Photo taken 1 minute after twin photo above. Compare detail on rear wall, lighting of cards. Note also uniform lighting on the ceiling from first to last card.

It's the HUMIDITY!





HASKELITE WOOD FLOORING WITHSTANDS ENDLESS MOISTURE CHANGES

Without Warping, Buckling, Cupping

● Wide swings in humidity—the enemy of solid wood floors—have no noticeable effect on Haskelite Compound Lumber Flooring. Built up of three inseparable, waterproof-bonded veneers, this modern wood floor stays flat without warping or cupping regardless of weather or season. So little does moisture affect Haskelite that it can be safely laid in mastic directly over concrete slabs above *or below grade* without wood subfloor. Application over wood subfloors is by blind-nailing.

Haskelite Flooring comes in Block and Plank . . . factory-finished with Hasko Penetrating Wood Seal Finish in medium or dark . . . or unfinished.

Before you write another flooring specification, check thoroughly into Haskelite. Consult Sweets, Sec. 11, Catalog No. 84 or write us for free samples and technical data.

HASKELITE MANUFACTURING CORPORATION
Dept. AR-416, Flooring Div., 208 W. Washington St., Chicago, Ill.

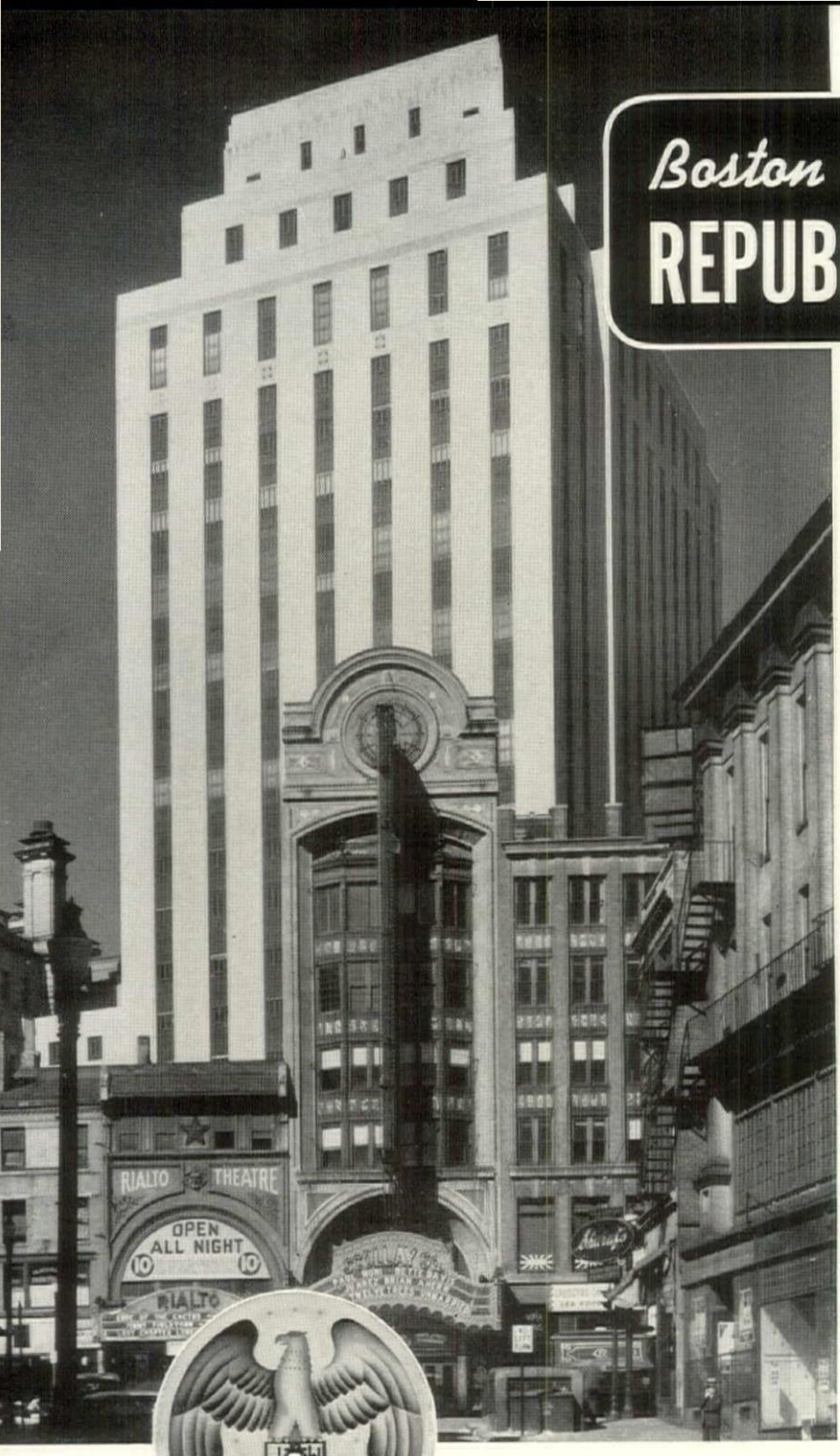
New! **HASKO** *Wood Seal* **TREATMENT**

HASKO Wood Seal FINISH—A new penetrating seal that actually goes *into the floor* to form a tough yet flexible finish of unusual durability. Does not raise the grain. Can be locally re-finished without laps at low cost.

HASKO Wood Floor WAX—A new spirit wax made of finest obtainable materials that cleans as it polishes. Produces hard-wearing high-lustre finish.

HASKO Wood Seal CLEANER—For renovation of floors with "penetrating" finishes. Quickly removes soil or ugly spots and dissolves old wax, to prepare floor for re-waxing.

HASKELITE *Compound Lumber* **FLOORING**



Boston Court House Protected b
REPUBLIC TONCAN IRON PIP

● For the city's staid archite tural triumphs of past gener tions, the new Boston Cou House provides a backgroun strikingly modern. Not only it modern in appearance, but materials, too. Thirty-eight ton of Toncan* Iron Pipe make u the plumbing system, the dow spouts and the waste line ● Toncan Iron is an alloy iro containing molybdenum an twice as much copper as the be copper-bearing steel. In servic it shows the highest rust-resi tance of the ferrous materials i its price class. ● Write Tonca Iron Pipe into your specifica tions when dealing with client who expect long service lif and low repair and maintenanc costs on piping installation

See Sweet's 27/3 or write for Booklet 333 giving all the reasons why this alloy iron is the best pipe service insurance any building can have.

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*Reg. U.S. Pat. O

REPUBLIC STEEL
DEFENSE FOR AMERICA

LET'S KEEP COOL!

If our American way of life is to survive, every industry must work in close cooperation with the industries that serve it and, in turn, with the industries it serves during this period of peak demand for goods.

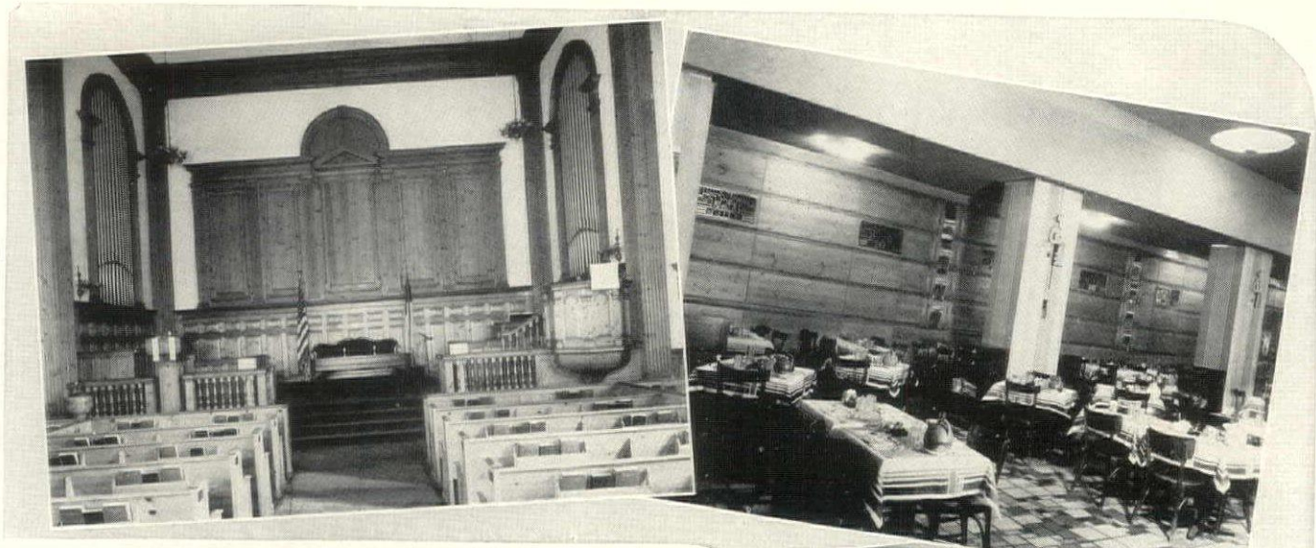
A rush for materials is very much like a run on a bank —and can be equally dangerous unless cool heads analyze and plan.

We, in Republic, are doing just that–analyzing the orders we receive and planning our production, so that our greatly enlarged blast furnace, electric furnace and rolling mill facilities can be as helpful as possible to the greatest number of buyers in serving America's urgent need for ***steel—first line of national defense.***

R. J. Wysor
PRESIDENT

REPUBLIC TONCAN IRON

An alloy of refined open-hearth iron, copper and molybdenum—*that grows old slowly*



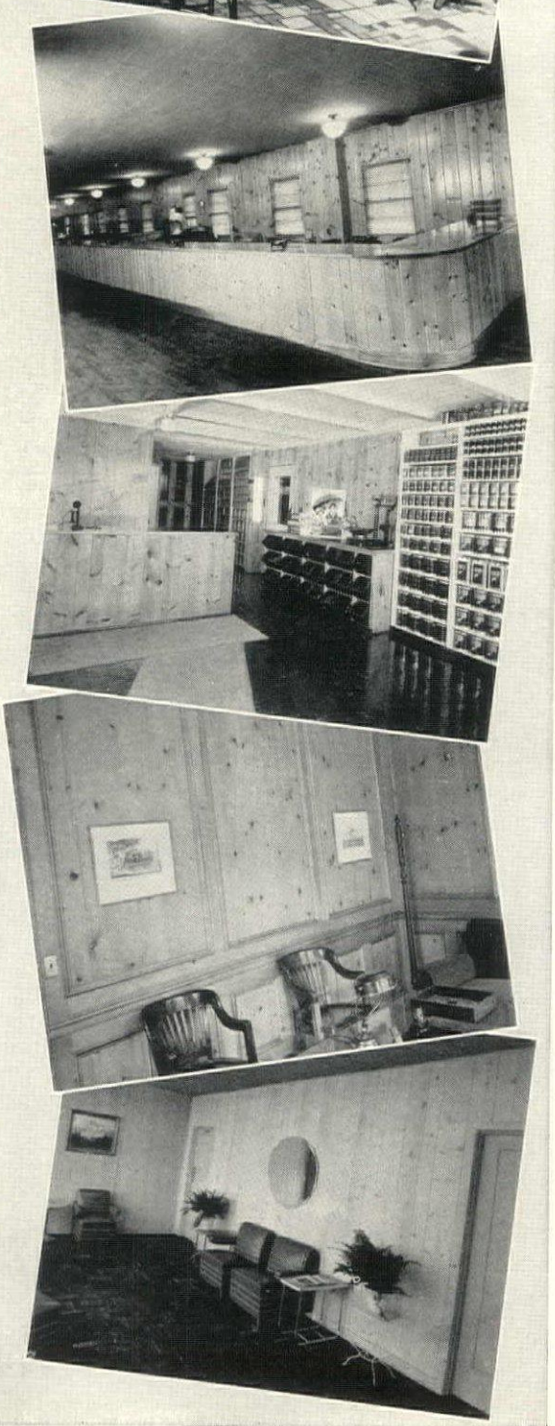
Genuine WHITE PINE

. . . ADAPTABLE FOR A WIDE RANGE OF USES

● The freedom of modern architectural design finds full expression in the many ways in which Genuine White Pine Paneling can be used for residences, churches, libraries, stores, business offices.

● Many combinations, such as horizontal boards with moulded battens or horizontal and vertical application used together, are proving effective backgrounds for modern furniture, draperies and decorations.

● Genuine White Pine, either natural or stained, takes on a depth of color with the years and acquires that richness and "friendliness" for which it is famous.



CLEARLY IDENTIFIED . . . ACCURATELY MILLED



Weyerhaeuser 4-Square Genuine White Pine Paneling is identified by the double end-marking on each board. This dependable trademarking protects the architect's specifications and insures the usual 4-Square features of proper seasoning, exact lengths and smooth square ends. Genuine White Pine is neither scarce nor expensive. Modern Reforestation methods are producing a perpetual yield for the future.

WEYERHAEUSER SALES COMPANY
FIRST NATIONAL BANK BLDG. • SAINT PAUL, MINNESOTA

YOUNG

High Efficiency STREAMAIRE

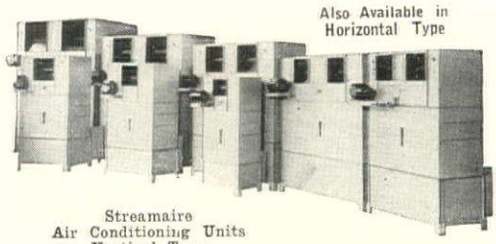
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What's your air conditioning problem? Does it call for dependable equipment that will deliver stand-out performance . . . year in and year out . . . at low operating cost? Then look to this latest complete line of Young High Efficiency units. Built with the latest engineering advancements these sturdy, compact units come in a wide selection of types, sizes, and capacities . . . for homes, offices, stores, public and industrial buildings . . . for a single room or building of any size . . . for summer comfort, for heating only, or for year 'round use. Call in a Young representative. He'll gladly cooperate with you — help you work out a sound, practical solution to any air conditioning problem.

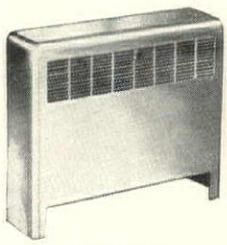


Offices in all Principal Cities

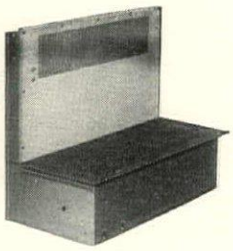
Also Available in Horizontal Type



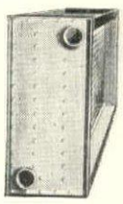
Streamaire
Air Conditioning Units
Vertical Type
8 sizes—400 to 16,600 C.F.M.
Catalog No. 7541



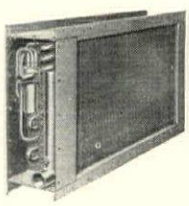
Streamaire
Convectors
Catalog No. 4039



Ductless
Air Conditioning Unit
Catalog No. 7040

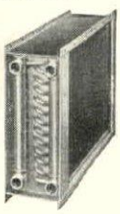


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Cleanable Tube—
Type "K"
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5537



Evaporator
Coil

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Water
Cooling Coil
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Type "W"
Catalog No.
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RACINE, WIS.

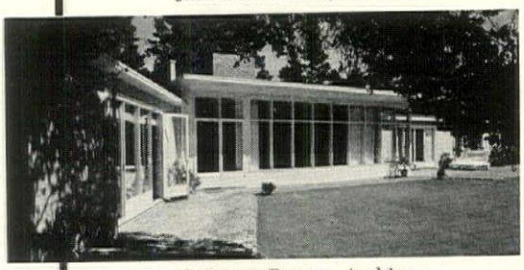
REDWOOD

the prize home wood!

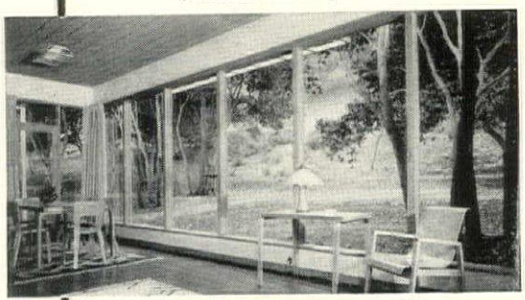
Three of many recent Redwood built prize winners in contests sponsored by national magazines.



JAMES ANDERSON, Architect



GARDNER DAILEY, Architect



JOHN EKIN DINWIDDIE, Architect

WHEREVER you find a prize-winning home, you're likely to find Redwood prominently specified among its materials of construction because Redwood and good planning go hand-in-hand. Due to its even texture, Redwood works up smoothly, aids creation of more interesting details . . . its "stay-put" qualities keep joints snug . . . its beauty permits distinctive paneling effects . . . its resistance to weather makes it especially suitable for exteriors with painted, stained, or transparent finishes or without finishes.

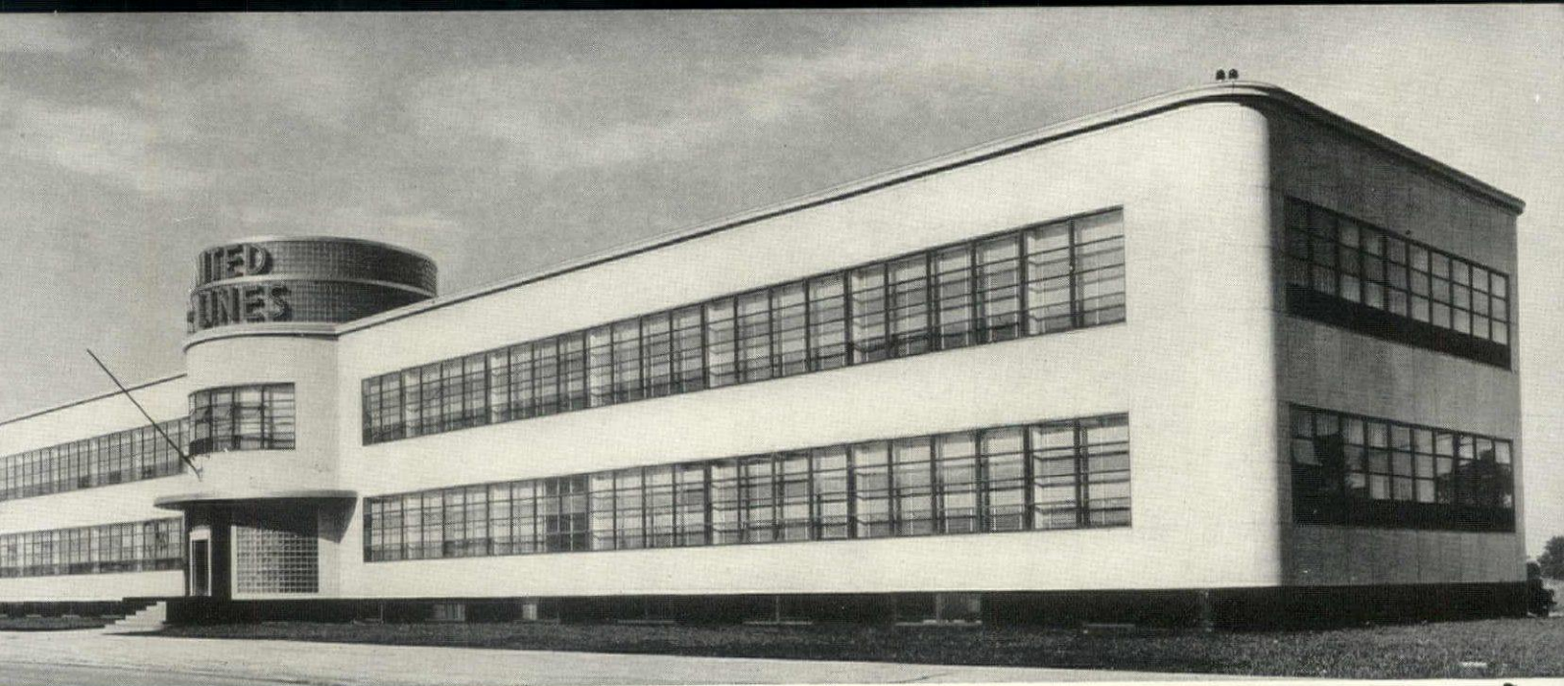
It is significant that a recent survey among several hundred architects shows that one in four used Redwood as an important material in building his own home. Architectural data on request.

California Redwood Association

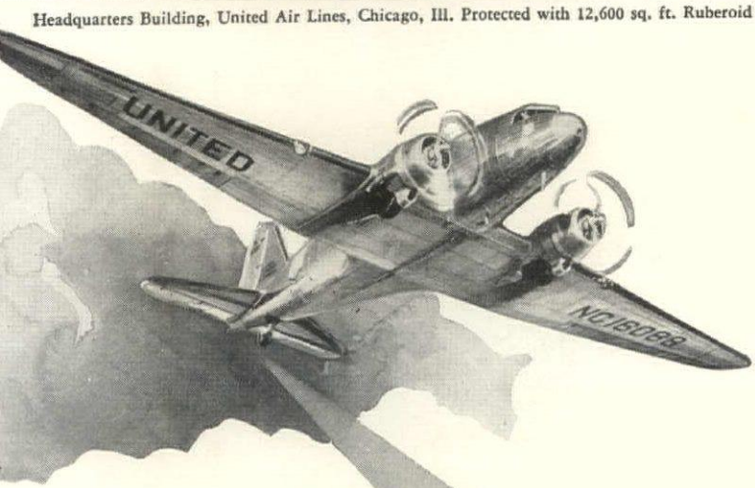
San Francisco

Also offices in New York City, Los Angeles

Whatever the job . . . consider Redwood!



Headquarters Building, United Air Lines, Chicago, Ill. Protected with 12,600 sq. ft. Ruberoid Bonded Coal Tar Pitch and Felt Built-up Roofing. Architect, Albert Kahn, Inc., Detroit, Mich.



Mainliner Trip 14
Chicago to New York
RU-BER-OID
all the way!

First leg of your journey—past the Headquarters Building of United Air Lines in Chicago. It's Ruberoid roofed!

To your plane—up—and eastward on your flight! You travel over cities and villages with countless residences, manufacturing plants and farm buildings—Ruberoid roofed!

And at the end of your journey—the Airlines Terminal in New York, also Ruberoid roofed!

Why are these buildings protected with Ruberoid roofs? Here are the reasons. Ruberoid is nationally known for its rigid standards of quality. Ruberoid roofs have achieved amazing performance records everywhere. Ruberoid has a full line of roofing products to meet the architect's specific needs.

Consider built-up roofs, for instance, which were used on the two Airline buildings illustrated on this page. Ruberoid makes all three major types of built-up roofs: (1) asbestos, (2) asphalt and (3) coal tar pitch and felt. Architects can choose not only the type, but the specifications best fitted for each job—because the specifications vary to meet problems caused by climate, fumes, fire hazards, etc.

You, as an architect, can solve your roofing problems with complete protection. Among Ruberoid's built-up specifications, are roofs which, when applied by approved roofing contractors, may be bonded for 10, 15 or 20 years, for *both* materials and workmanship.

When you have a job on the boards where roofing counsel is desired, call in a Ruberoid engineer. His services are free . . . his information unbiased. The Ruberoid line of roofing materials permits him to recommend the type custom-built to conditions.

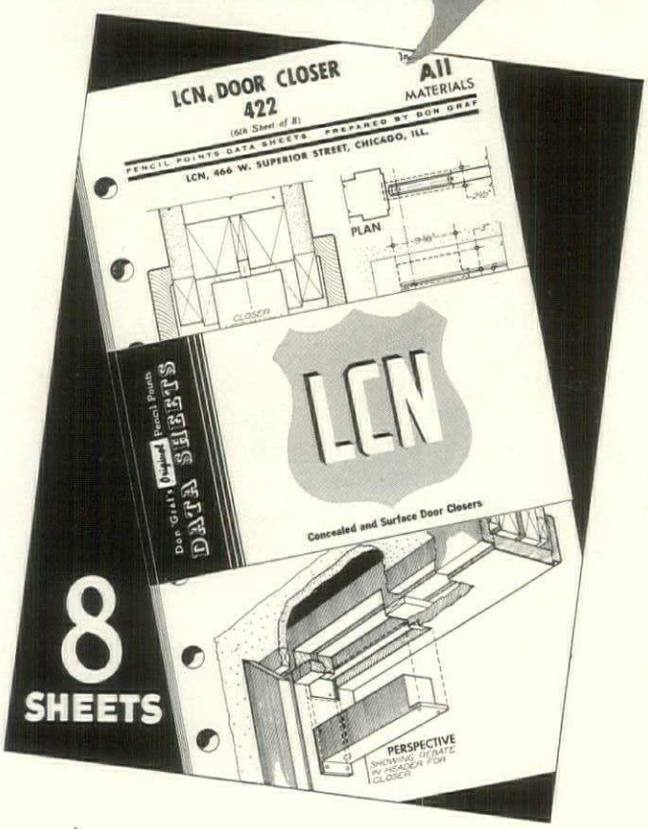
For popular specifications, consult Sweet's. For complete specifications, write us on your letterhead. Address Dept. AF-6. Write today. The Ruberoid Co., *Executive Offices:* 500 Fifth Avenue, New York.

The Air Lines Terminal, New York, N. Y. Protected with 15,500 sq. ft. Ruberoid Bonded Asbestos Felt and Asphalt Built-up Roofing and 2,800 sq. ft. Ruberoid Bonded Coal Tar Pitch and Felt Built-up Roofing under Promenade Tile. Architect, John B. Peterkin, New York, N. Y.



RU-BER-OID
ROOFING AND BUILDING PRODUCTS

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Now, for the first time, you can get a set of Don Graf Data Sheets on the subject of modern door control. These are just published and ready for distribution. Eight sheets, covering general facts on doors and control requirements plus diagrams and data on the correct detailing and preparation for six principal types of LCN overhead concealed door closers. A set of these sheets will be sent you promptly on request. No obligation whatever. A letter, postcard or the coupon below will bring them.

Better Mail It Today—While You Think of It

LCN, 470 W. Superior St., Chicago

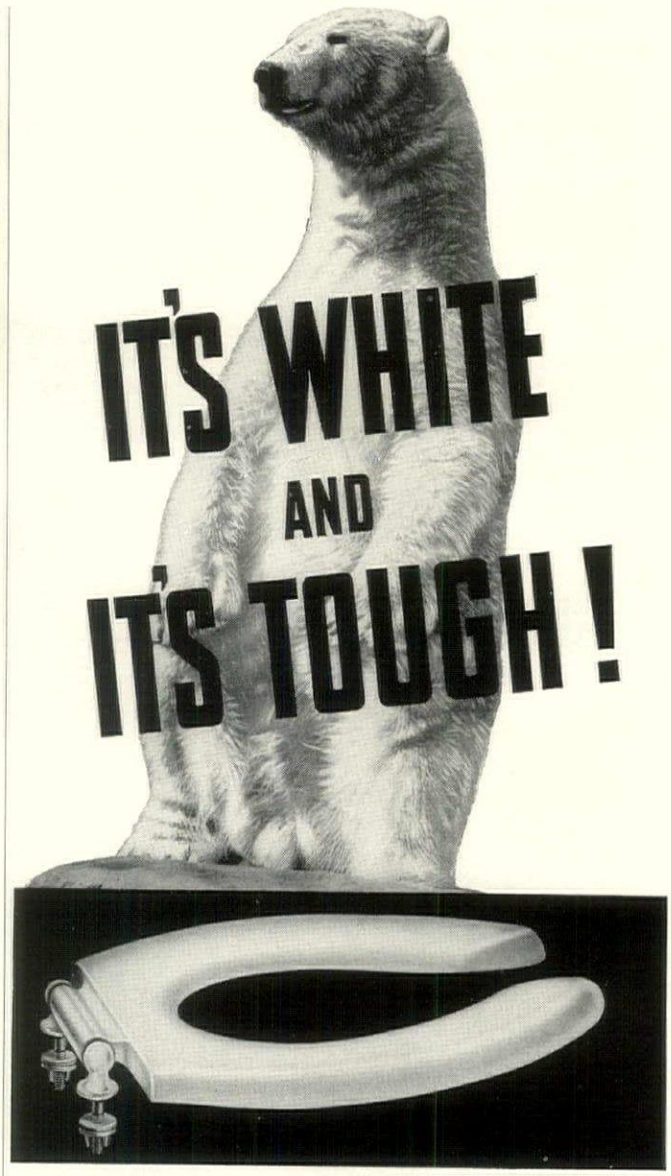
Please send me the set of Don Graf Data Sheets announced in Architectural Forum.

Individual .....

Firm .....

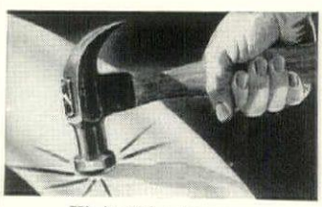
St. Address .....

City ..... State .....

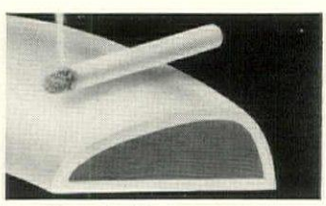


IT'S WHITE AND IT'S TOUGH!

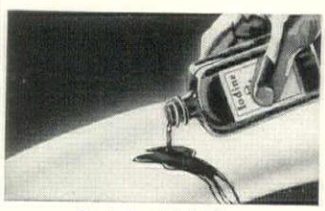
CHURCH MOL-TEX
WHITE MOLDED TOILET SEATS



Hit it with a hammer —



Burn it with a cigarette —



Stain it with iodine —

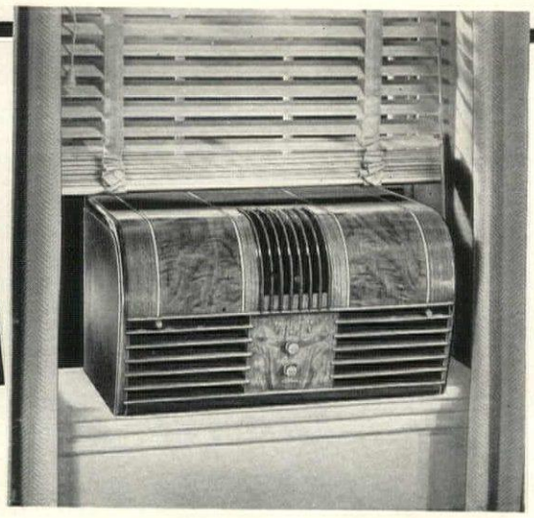


Steel wool and cleansing powder quickly restore the pure, white lustre.

Samples and Information — You are invited to write for any information desired and for sample cross section which may be examined at your convenience. C. F. CHURCH MANUFACTURING CO., HOLYOKE, MASS., *Div. of American Radiator & Standard Sanitary Corp.*

Make New Homes More Saleable with this NEW, LOW-COST AIR CONDITIONING!

PHILCO-YORK SINGLE-UNIT AIR CONDITIONER



Model 76-A *(Illustrated)*

People look for complete, modern comfort in the homes they buy today. That's one of the many reasons why the new Philco-York Single-Unit Air Conditioner is a real boon to architects, contractors and builders.

It's real, complete, efficient air conditioning for individual rooms at amazingly low cost! By including Philco-York Air Conditioners in the specifications of your houses, you can increase their saleability many times over. And architects can now bring the comfort and pleasure of air conditioning to their clients at a cost that is well within the reach of a modest budget!

- Cools and Conditions Room Air.
- Dehumidifies. The moisture is wrung out of the air, leaving it cool, dry, stimulating.
- Draws in Fresh, Outside Air.
- Filters Out Dirt, Dust and Pollen. A boon to hay fever sufferers!
- Circulates the Air.
- Shuts Out Street Noises.
- Removes Stale, Stuffy Inside Air.
- Gives Pure Air All Year 'Round.

Easily and Quickly Installed

The new Philco-York Air Conditioner is easily and quickly installed . . . no plumbing . . . no pipe connections . . . no extra wiring necessary. No technical problems or expense. Simply plug into any electric socket.

Let the new Philco-York Self-Contained Air Conditioner add an important selling point to the homes you build. Investigate now! For full information contact your Philco distributor or mail the coupon.

There's a Philco-York Air Conditioner for Every Size Room, Priced as Low as . . . **$129.50**

Mail Coupon NOW!

PHILCO, Air Conditioning Dept. 574
Tioga and C Streets, Philadelphia, Pa.

Please send me full details and specifications on Philco-York Air Conditioners, together with Discounts and Special Wholesale Credit Terms. Also send me your big, new Illustrated Booklet.

NAME .....

STREET ..... COUNTY .....

CITY ..... STATE .....

FORUM OF EVENTS

(*Continued from page 14*)

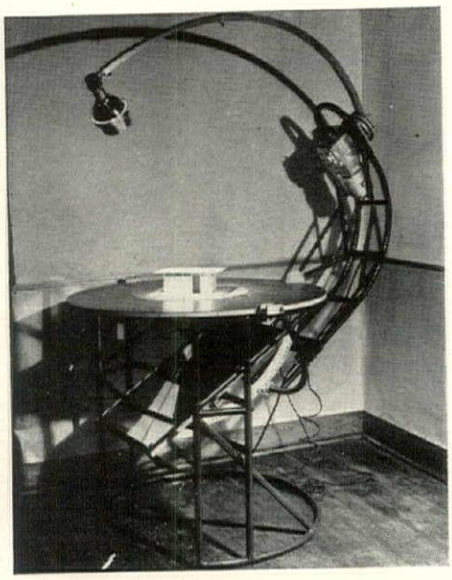
INSIDE-OUTSIDE HELIODON

The first U. S. heliodon was built for Columbia University by FORUM Editor Henry N. Wright, opening up a new and important approach to building design. The heliodon is a very simple mechanism, consisting of a spotlight which can be so adjusted that its rays shining on a model can be made to approximate those of the sun at any hour of the day, on any day of the year, in any latitude.

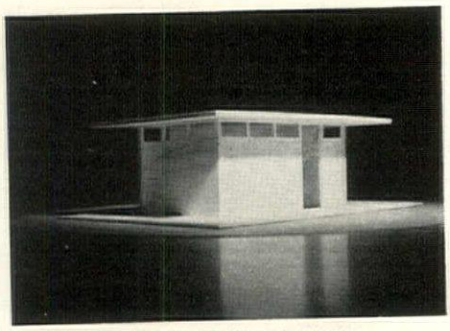
Designed by George Malcolm Beal, Professor of Architecture at the University of Kansas, this more recent model shows many improvements over its predecessor, offering a flexible and easily worked instrument for the study of architecture in its relationship to sunlight. The model occupies the center of the table, as shown, and the spotlight above is on a motor-driven arm which traces the path of the sun on any given day in a minute or less. Adjustments for latitude and day of the year are provided by the tubular metal cradle and by the telescoping lamp arm. The moving lamp can be stopped at any point in its course if it is necessary to study the light at any particular hour or minute.

Most interesting of the new features of this heliodon is the removable panel in the center of the table, which permits an investigation of the effects of sunlight within the model. A tilted mirror below this opening permits inspection or photographing with a minimum of inconvenience. The two model photographs, showing an exterior and interior view indicate the accuracy with which the effect of sunlight may be reproduced. The possibilities of the instrument are well described by its designer: "Reliance upon the usual instruments of the draftsman to gain a picture of this problem of natural light is a laborious time-consuming process. A lively imagination coupled with the general knowledge of the relationship between sun and earth is of much more practical value and will probably give better results. However, some graphic picture is a necessity, and the Inside-Outside Heliodon was designed for this purpose."

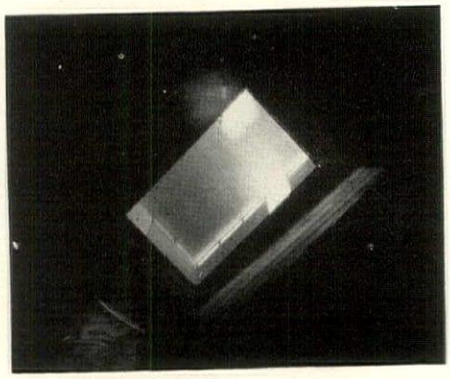
(*Continued on page 72*)



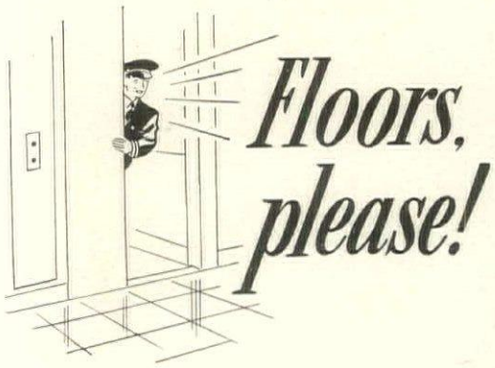
HELIODON AND MODEL



10 A.M. MARCH 21, 38° N. LATITUDE



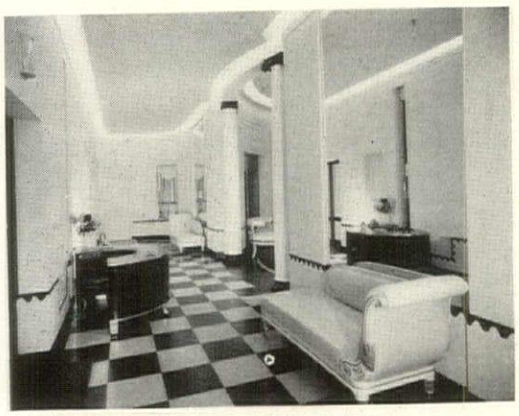
INSIDE VIEW OF MODEL



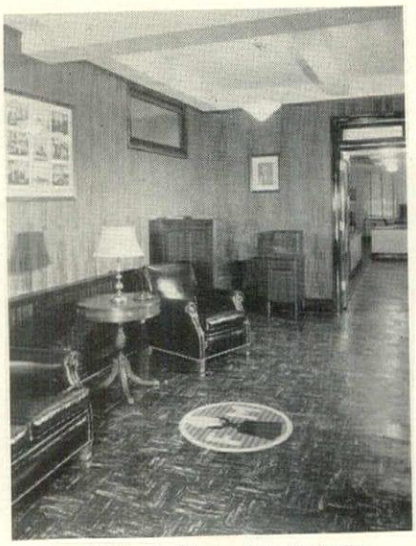
Floors, please!

IN SPECIFYING flooring for areas in office buildings, architects base their decision on how a given material meets the requirements of the project.

Office building corridor floors should be long wearing, eye-appealing, inexpensive to maintain, safe under foot, and easy to repair in case of accidents or alterations.



Lobby—Cohn & Rosenberg, New York City



Office—Fairbanks-Morse, New York City

Office building tenant space requires floor surfaces that will do everything mentioned above and which possess in addition, ability to resist abuse from all types of office furniture and equipment.

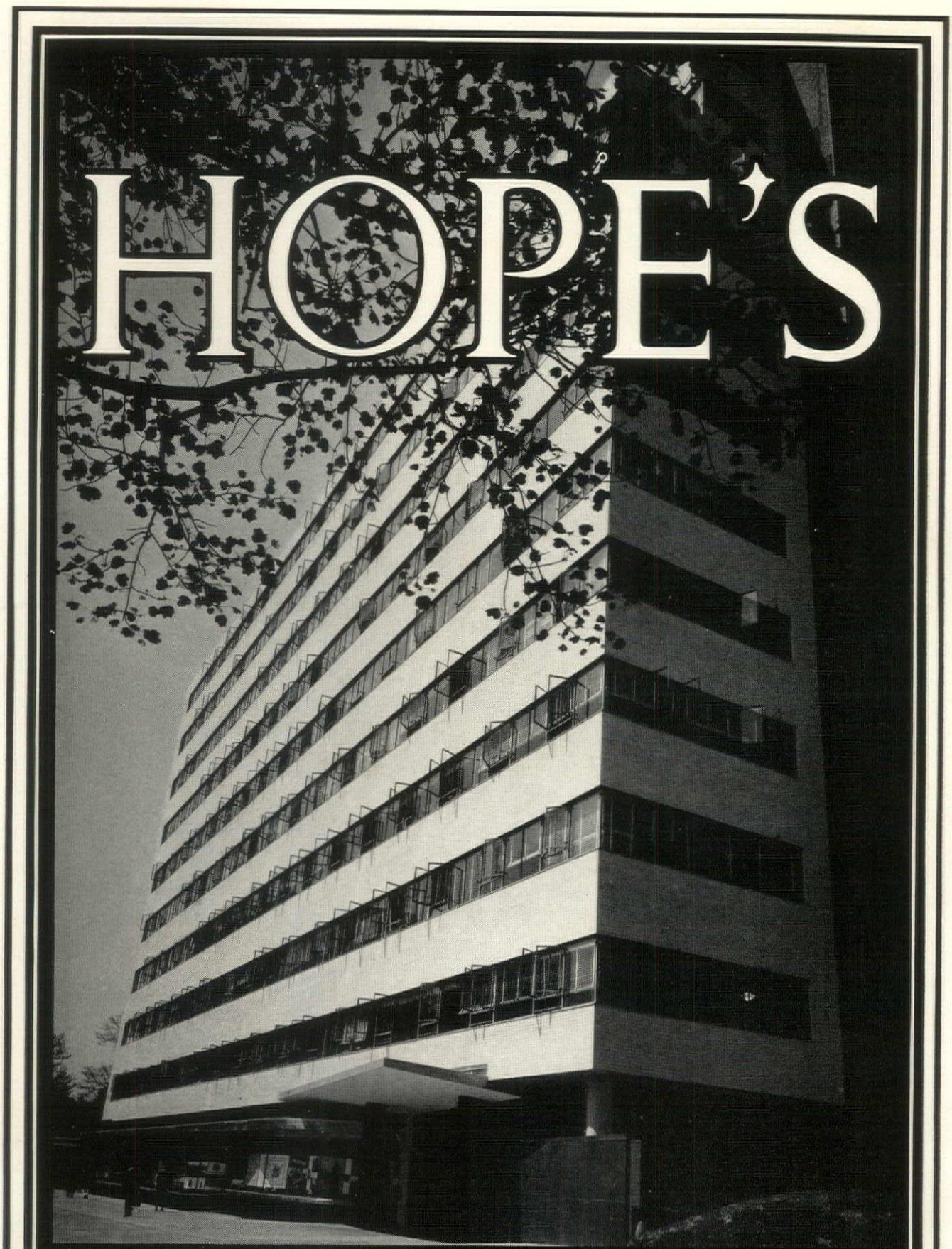
Low first cost is, of course, an added virtue for any type of flooring. Investigate Tile-Tex and find how adequately it meets all office building floor requirements and how emphatically it possesses the virtue of low first cost.

See Sweet's Catalog, Page 11-64, for specification and design data, and call on our Design Department for helpful suggestions.

OUR constant objective is to furnish the architect with an honest, steadily improved product that will enable him to design architecturally correct floors which can be installed and maintained properly at minimum cost.

The TILE-TEX Company

Chicago Heights, Ill.
Eastern Sales Office: 101 Park Ave., New York



Longfellow Building, Washington, D. C. *William Lescaze, Architect*

HOPE'S HOPKINS WINDOWS WERE SPECIFIED AND INSTALLED IN THIS BUILDING.

HOPE'S WINDOWS INC., *Jamestown, N.Y.*

MONCRIEF
Winter Comfort



MONCRIEF makes a type and a size of winter air conditioner or furnace for any type and size of home. Whether the need be for the utmost in automatic operation, convenience and style, or for economical operation and low initial cost, you will find in the extensive and complete Moncrief line a unit that checks with your requirements at every point.

Moncrief winter air conditioners and warm air furnaces are built in specialized types for burning coal, oil, or gas. All are modern in design, ruggedly built to give long satisfactory service, and priced to give the builder or homeowner outstanding value.



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Moncrief Engineering Service is available to you without charge

THE HENRY FURNACE & FOUNDRY CO.
3485 E. 49th ST. • CLEVELAND, OHIO



NO MATTER HOW WELL YOUR CONCRETE FLOORS ARE LAID THEY NEED THE PROTECTION OF **LAPIDOLITH LIQUID***

The finest concrete floor, however expertly laid, will develop a large percentage of tiny voids after setting. This decreases density of the topping and permits the particles to dust off readily under traffic and abrasion. This and other inherent reasons for dusting can be corrected on old or new concrete by applying LAPIDOLITH LIQUID.

Scientific Laboratory tests reveal that LAPIDOLITH LIQUID has at least 100% lower surface tension than any other comparable treatment. This means LAPIDOLITH LIQUID will penetrate quicker and deeper into the concrete, producing a much more thorough chemical hardening result which is permanent.

Write for complete details concerning "on the job" performance of LAPIDOLITH LIQUID. Also see data on LAPIDOLITH LIQUID in Sweet's Catalog, page 5/24.

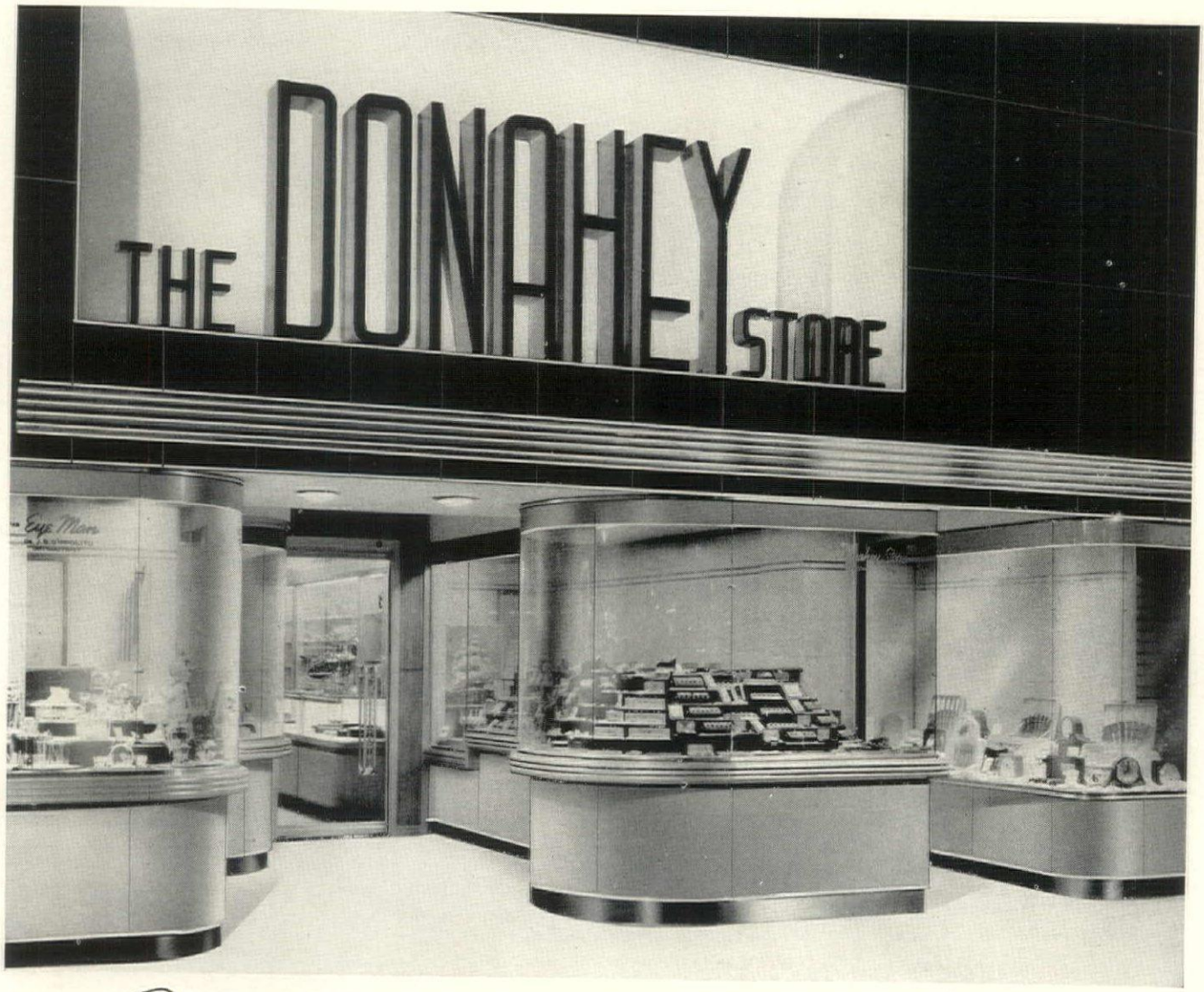
LAPIDOLITH LIQUID is flushed on finished concrete.

*U. S. Patent #2203302

LAPIDOLITH LIQUID
ONE Time Treatment
Economical To Use
Easy To Apply

Dept. F6

L. SONNEBORN SONS, Inc.
88 LEXINGTON AVE. NEW YORK CITY



Architect: Armand D. Carroll

Good design + Pittco Products

means a successful store front

THE test of a successful store front . . . the thing that decides whether a client is pleased or dissatisfied with your work . . . is whether the store front attracts customers and boosts business.

Architects have found that the use of Pittco Store Front Products to carry out their designs helps materially to assure sales-building fronts of this kind. And the reason is that Pittco Products are meant to be used together, are designed to give the architect wide latitude in design, are sure to produce a unified, harmonious front with maximum sales appeal.

Polished or Suede-finish Carrara Structural Glass provides you with a facia material of unique beauty and durability. The Pittsburgh Sandaire Process makes possible the fabrication of intricate glass lettering and decorative designs. Pittsburgh Plate Glass, Herculite Doors, PC Glass Blocks and Architectural Glass, Pittsburgh Mirrors and Tapestry Glass, Pittco Store Front Metal . . . all these are ready to assist you in achieving striking store front effects.

Specify Pittco Products for sales-winning fronts. And send the coupon for detailed information about them. We'll send you, free, a book containing many graphic examples of actual Pittco Fronts which have built business for their owners.

PITTCO STORE FRONTS

PITTSBURGH PLATE GLASS COMPANY

"PITTSBURGH" stands for Quality Glass and Paint

Pittsburgh Plate Glass Company
2299-1 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your new, illustrated booklet, "Pittco Store Fronts — and Their Influence on Retail Sales."

Name_____

Street_____

City_____ State_____

FORUM OF EVENTS

(Continued from page 68)

MASS PRODUCTION A LA MONTICELLO



"A distinct departure from conventional design" is the new Chicago home of the Lindberg Engineering Co., according to a press release. "It is of a style that will not become dated in a few years . . . a faithful reproduction in every detail of Williamsburg Georgian architecture. . . . Many of the characteristic features of the Georgian style were developed by Thomas Jefferson." Main Jeffersonian touch: the wrought iron window grilles, "following exactly the design used in his home at Monticello." Slight modifications of the Williamsburg theme include replacement of candles with fluorescent lighting fixtures. The factory was designed for straight-line production of various types of furnaces.

WHITE VERBOTEN

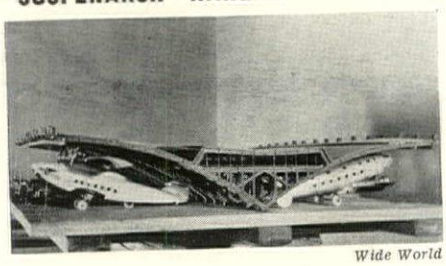
To the German people, currently concerned either with dreams of an Aryan universe or with speculations on where the next potato is coming from, Reichsmarshall Goering's decree on white buildings probably makes little difference one way or another. "White buildings," reads the decree, "are clearly visible to enemy pilots in the moonlight.



Associated Press

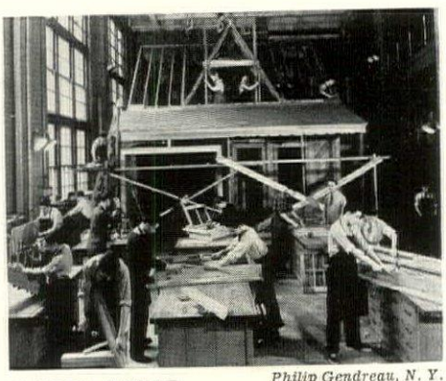
They facilitate bomb-aiming. For the duration of the war, new buildings and others needing paint must be adapted in color to the surrounding buildings." The illustration would suggest that the world's most overdressed Air Minister has no intention of remaining "clearly visible" on moonlight nights.

"SUSPENARCH" HANGAR



Wide World

It is no news that steel is more efficient in tension than in compression. But Paul Chelazzi's unique hangar, combining arch and cable, is news, may yet be built. Said the "Suspenarch" inventor: "How did I do it? I was sitting in Shanghai with no business. And it came to me."



Philip Gendreau, N. Y.

SCHOOL HOUSE

To instruct their students of building construction, directors of the Brooklyn Technical High School have adopted an expedient so completely direct and simple that one wonders why it has not been used more frequently. To learn how to build a house, students build a house. Photograph shows the class in action. The method should be at least as good for future architects as for future carpenters.

(Continued on page 76)

ON THE RECEIVING LINE AGAIN

FLOORS OF *Terrazzo* *

FROM the number of reception rooms with TERRAZZO floors you would say that hospitals have found a mighty good "greeter." In the De Paul Sanitarium in New Orleans, there are three more rooms like the one illustrated. And TERRAZZO is in the corridors, too.

TERRAZZO fits into a hospital perfectly for floors, baseboards, wainscots, walls, stairways. You can have it in any interesting design, any color combination in reception rooms, cafeterias, private rooms and wards. Or you can specify conventionally designed TERRAZZO floors to serve in corridors, labs, operating rooms and kitchens. Everywhere, they will endure for the life of the building. They will be smooth, sanitary, easy to clean. Their upkeep will amount to practically nothing.

Ask your local TERRAZZO contractor for complete information, or write National Terrazzo & Mosaic Association, 1420 New York Avenue, N.W., Washington, D. C.



***5 Reasons for Using Terrazzo**

1. ECONOMY. Initial cost *plus* no repairs . . . no replacement . . . minimum upkeep over a period of years, for Terrazzo equals—usually is less than—initial cost *plus* repairs . . . and replacements . . . and higher upkeep for other types of floors.

2. COMFORT. Finished Terrazzo is *easy to walk on.* It is less slippery than any waxed surface. Furthermore, Terrazzo can save you enough money to acousticate your ceiling, thus giving you a very low noise level.

3. CLEANLINESS. Terrazzo can be sealed so as to be practically non-absorbent. Its smooth, jointless surface *cleans easily*...can harbor no accumulation of macroscopic or microscopic germs. It is aseptic.

4. COLOR AND DESIGN. Terrazzo has warmth and beauty. You may specify *any design* you wish—pictorial or geometric—in virtually *any combination of colors.*

5. DEPENDABLE INSTALLATION. This Association's objective is to see that your Terrazzo installations *turn out exactly as you want them.* Write us today for complete information on the above points or see our advertisement in Sweet's Catalog for basic technical data.

De Paul Sanitarium, New Orleans, La. Architects: Andry & Feitel of New Orleans.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION



• *The new home of Tiffany is at Fifth Avenue and Fifty-seventh Street—the center of modern Manhattan's fashionable shopping activity. Architects: Cross & Cross.*

The House of Tiffany knows fine metals

TIFFANY has long been an American tradition. The "Tiffany-blue box" has gladdened many hearts and lives. Tiffany knows fine jewels—and fine metals.

So it is significant that in Tiffany's new home ARMCO Stainless Steel was selected for all window frames above the first floor. . . . An enduring metal for an enduring structure.

This distinguished installation offers another example of the many architectural applications of ARMCO Stainless Steel. The solid, rustless metal blends harmoniously with other building materials.

ARMCO Stainless Steel is supplied in various finishes, from a satiny surface to a high mirror polish. It is readily formed to any design. It will not tarnish or stain and it cleans with magic ease. When its many benefits are weighed, its cost is not excessive.

There are many interesting new architectural uses for this modern metal, both for interior details and equipment and for outside decorative effects. We shall be glad to send you further information. The American Rolling Mill Company, 1771 Curtis Street, Middletown, Ohio.

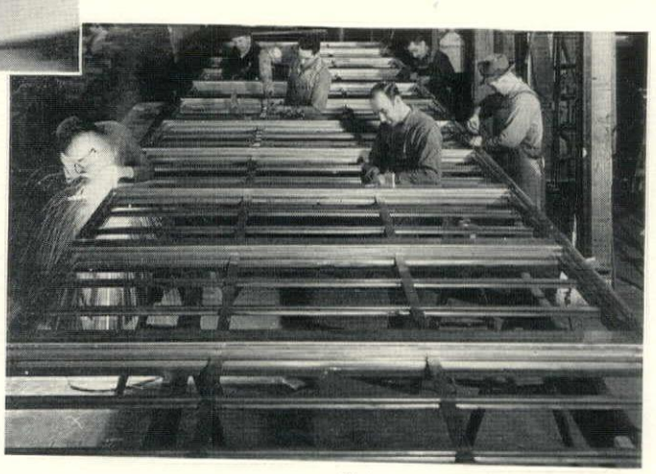
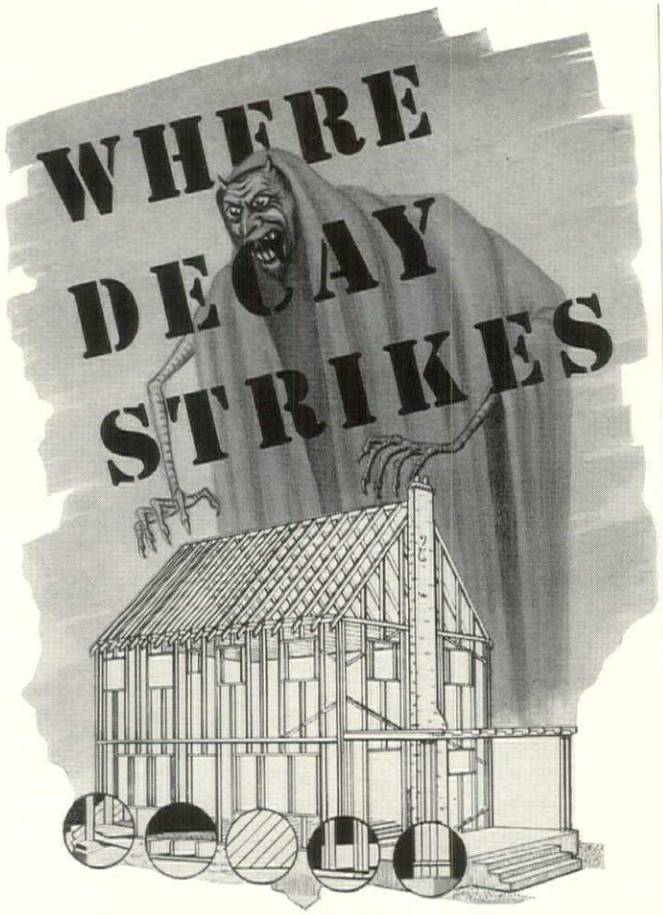


Photo courtesy General Bronze Corporation

• *Here the* ARMCO *Stainless Steel window frames for the new Tiffany Building are shown being assembled and arc-welded.*

MADE OF ARMCO STAINLESS STEEL

ARMCO STAINLESS STEEL



DEFEND

THESE 5 VULNERABLE POINTS with Du Pont CZC

THE FIVE CIRCLES above show potential points of weakness in any building—the five vulnerable points where decay strikes first. When you specify lumber treated with CZC (Chromated Zinc Chloride) at these points, you assure your client the protection every well-built house should have.

The cost is small—the benefits are great. Lumber treated with Du Pont CZC is decay resistant and termite repellent. It is also fire retardant, resistant to abrasion, clean, odorless and paintable.

You can assure freedom from costly repair for years to come by CZC treatment of all lumber used at these points: (1) Sills, headers and soles. (2) Sub-flooring. (3) Sheathing. (4) Joists and studs. (5) Porch columns, flooring and supporting members.

Write for the address of the nearest plant equipped to render this service. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington, Del.

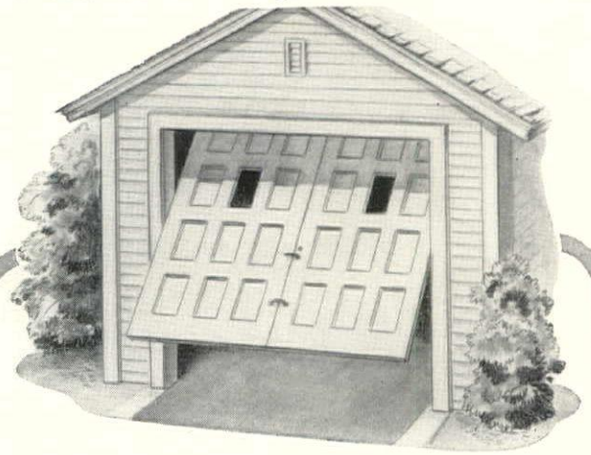
SPECIFY LUMBER TREATED WITH

DUPONT CZC

REG. U.S. PAT. OFF.

CHROMATED ZINC CHLORIDE

Meet Any Garage Specification With A Stanley Hardware Set



STANLEY "SWING-UP"

Upward-acting... fits any pair of stock garage doors





An upward-acting hardware set that fits any pair of doors not exceeding 250 pounds in weight; 8′ to 8′5″ wide, 7′ to 8′ high, 1⅜″ to 1¾″ thick. Other sizes on special order.

Particularly useful where design or decoration to conform with architectural style requires construction of special doors. Practically no head room required.

Doors open easily. Heavy springs do the lifting, with only a slight starting pull.

YOUR GUIDE TO GOOD HARDWARE



Stanley Catalog No. 61, giving complete details on the entire Stanley Hardware line, will prove handy in preparing your specifications. Write for your free copy. The Stanley Works, New Britain, Connecticut.

STANLEY

HARDWARE FOR CAREFREE DOORS

DOORS AND WINDOWS OF

Ponderosa Pine

are a Good Investment

★ 40 YEARS OF USE CAN'T BE WRONG!

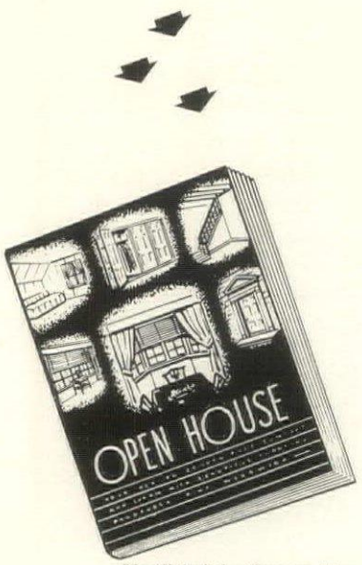
Ponderosa Pine has been a standard for interior and exterior woodwork for over 40 years! It's been the standard because of its known qualities—because of the endurance and beauty *Ponderosa Pine* delivers so efficiently.

Doors and windows can't be taken lightly. Every size, style and price home deserves lasting door and window satisfaction. That's why *Ponderosa Pine* is the favored material for both doors and windows—why you can so confidently specify and recommend it.

Here's what we're telling the public to back up your recommendations. *"Ponderosa's"* light color . . . its uniform grain . . . its even-textured surface mean lasting satisfaction. Because it takes nails and screws without splitting, *Ponderosa Pine* doors are easier to hang—*Ponderosa Pine* windows fit better, last longer. It takes any design by hand or machine easily and accurately. It takes any finish—paint, enamel, stain, varnish—and holds them well. Its ends and edges don't splinter readily; its grain resists "raising" and the natural insulating value of wood means greater comfort and fuel economy.

We're doing more than that! We're illustrating sound, efficient uses for *Ponderosa Pine* doors and windows—ideas for better planning! In consumer magazines we're offering a new type of idea book—*free!*

"OPEN HOUSE" tells people how to use doors and windows—gives them ideas for planning all the rooms in their house for greater convenience, greater utility and greater beauty. And it explains why *Ponderosa Pine Woodwork* is better! Architects, builders, realtors, dealers and money-men—write for a copy of *"OPEN HOUSE"*—you'll like it!



You'll find the planning ideas in "OPEN HOUSE" interesting. You'll agree that we're helping people understand good planning. Be sure to get your copy.

PONDEROSA PINE WOODWORK

111 WEST WASHINGTON STREET • CHICAGO, ILLINOIS

FORUM OF EVENTS

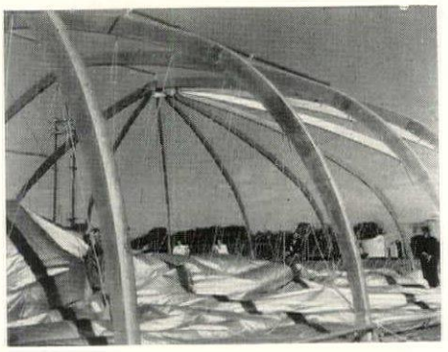
(Continued from page 72)

AER-O-DOME

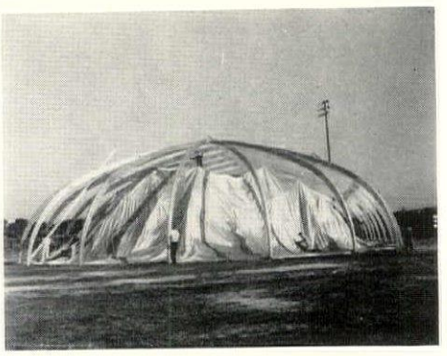
For the past five years General Motors has supplemented its advertising campaigns with the "Parade of Progress," a traveling show which has played to over 9,500,000 people in some 200 cities. The 1941 "Parade," now going on tour, presents a variety of research developments, notably the high-intensity "peanut tubes" for searchlights, lightweight, high-powered electric motors using glass insulating tape, plastic-treated plywood for molded airplane wings, synthetic rubber and lightweigh: metals. For the new show there is a new "auditorium," a remarkable structure that can be carried on a single trailer and assembled or knocked down in practically no time at all.

The tent is 152 feet by 80, with an inside height of 26 feet. Use of outside supports provides for uninterrupted visibility from any part of the interior. The fabric covering is impregnated with aluminum powder to give it the same metallic sheen as the ribs, and is lightproof. The ribs, which are hollow aluminum alloy boxes tapered at their ends, vary from a depth of six inches at the feet to sixteen in the upper sections with a uniform width of five and a half inches, weigh only about eight tons and come in sections whose maximum length is 35 feet. Two hundred bolts put the entire job together, and the only other fasteners required are the heavy pegs which are driven through the bases to anchor the ribs to the ground. As shown in the illustrations the fabric is pulled up on ropes and pulleys after the metal framework has been assembled. The Aluminum Company of America, which collaborated in the production of the "auditorium," points out other valuable uses for such structures: temporary hangars, field hospitals, food depots and other uses particularly important at the present time.

Designed under the supervision of GM's famed Research Director Charles Kettering, the structure is an all-aluminum affair



in which a series of ribs support a tent from the outside instead of inside. Curiously reminiscent of Le Corbusier's unbuilt Palace of Soviets, in which an external arch also supported an auditorium roof, the



astonishingly graceful construction again strongly suggests that building of the future may very possibly take its methods not from the architects, but from the work of engineers in such industries as aviation and



automotive, where fortunately it is not known that in architecture certain things are just "not done."

(Continued on page 80)

The Only Home Heat That Coasts—

How It Saves You Money And Gives Added Comfort



WOULD you put up with a car, that the instant you slipped the clutch or took your foot off the gas, it came to a dead stop? And no coasting? Of course you wouldn't.

Still that's exactly what happens with any fan-pushed warm air. When the fan stops, so does the heat.
But not so with the Burnham radiator heat, especially hot water.

Long after the fire or circulator is off, the heat goes coasting along. Coasting, but *not costing*. It's a free heat that prevents the all-on, or all-offness of fan pushed warm air. Furthermore — which is more than just further — you have both the "heat-shine" radiant heat and the convected, working together, keeping the bottom and upper parts of the room in balance. Floors are kept warm by the radiant sunlike heat. There are no cool drafts of recirculated air across floor on its way to the return intakes. Burnham Boilers sting the fuel bill. Burnham Radiators give you a coasting heat. One that while it coasts is cost free.

See Sweet's. *See for yourself.*



The New Burnham Radiant Radiator is its own self cabinet and grille, making it ideal for recessing. Furnishes both radiant and convected heat.

Burnham Boiler Corporation

Irvington, N. Y. Dept. J

Zanesville, Ohio Dept. J

Representatives in All Principal Cities of the United States and Canada



HOW TO CHOOSE WINDOWS for a low-cost home—or any home!

● Frankly, now, there's no secret formula for choosing the best kind of window for a low-cost home—or for any home. Just do it this way:

First, choose windows for economy! Then you automatically toss out the ordinary old-style window—it lets heat *and fuel dollars* leak out, soot and dirt sneak in.

Second, choose them for trouble-free operation. Be wary of the window that's apt to need fixing.

Third, choose them for "real" first cost. Are they easy to install? Do sash, frame, screen, trim and storm sash "belong" to each other?

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Above: No. FL-P1826C, seamless porcelain cabinet with a half pillar of fluorescent light at each side. 24 inch lamps concealed behind curved opal lumarith panels. Chrome trim. Mirror 18" x 26". Wall opening 24" x 24" x 4".

Right: No. A1826C-FL, a moderately priced cabinet of seamless baked enamel with fixtures for two 18 inch fluorescent lamps. Mirror 18" x 26". Wall opening 16" x 24" x 4".

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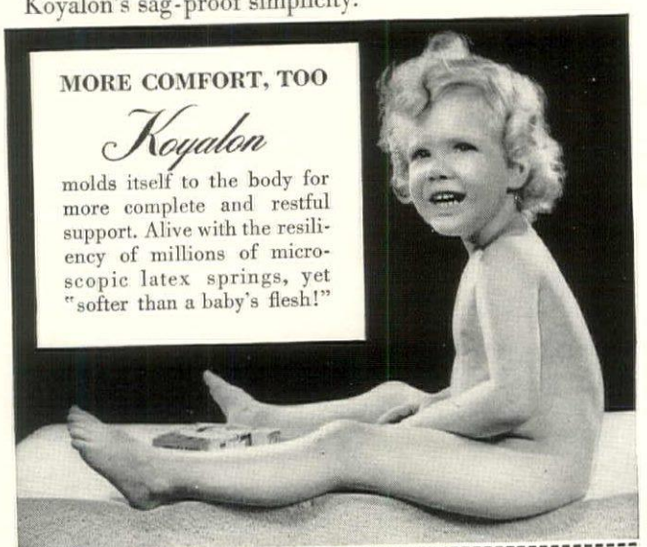
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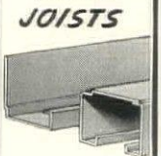
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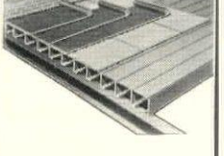
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FORUM OF EVENTS

(Continued from page 76)

T-SQUARE FORUM

Forty-four years old this year, Philadelphia's T-Square Club stands well up in the top group of architects' social-educational organizations, has made more than a local reputation for its work in educating students, architects and the public in the problems and services of the profession. For one of its recent meetings, the Club selected the most basic of all architectural problems: Why don't more people retain architects? For the answers it turned not to its members, but to clients. Three men and three women who had recently built houses were invited to come and sit around a table and let their hair down. They did. While six people constitute no Gallup poll, the answers were uncommonly revealing. To alert architects they might be useful.

Of the men, one was a wealthy landowner who looked upon the architect as an agent for enhancing property values, one an engineering executive who considered architects as fellow technicians, and the last, who solved the problem of visualizing his dream house by going to a development and buying one he liked. The three women included one with a nine to five job and two interested in civic activities. Questions fired at the panel included six on design and construction, four on fees, and sixteen on client-architect relations.

Design questions revolved around modern versus period, revealed that the clients were far from clear on what modern residential design was. Flat-roof corner-window jobs were unanimously voted "all right for someone else." Seashore houses were excepted from this damning verdict. None liked combined living-dining rooms, or considered outdoor dining spaces desirable.

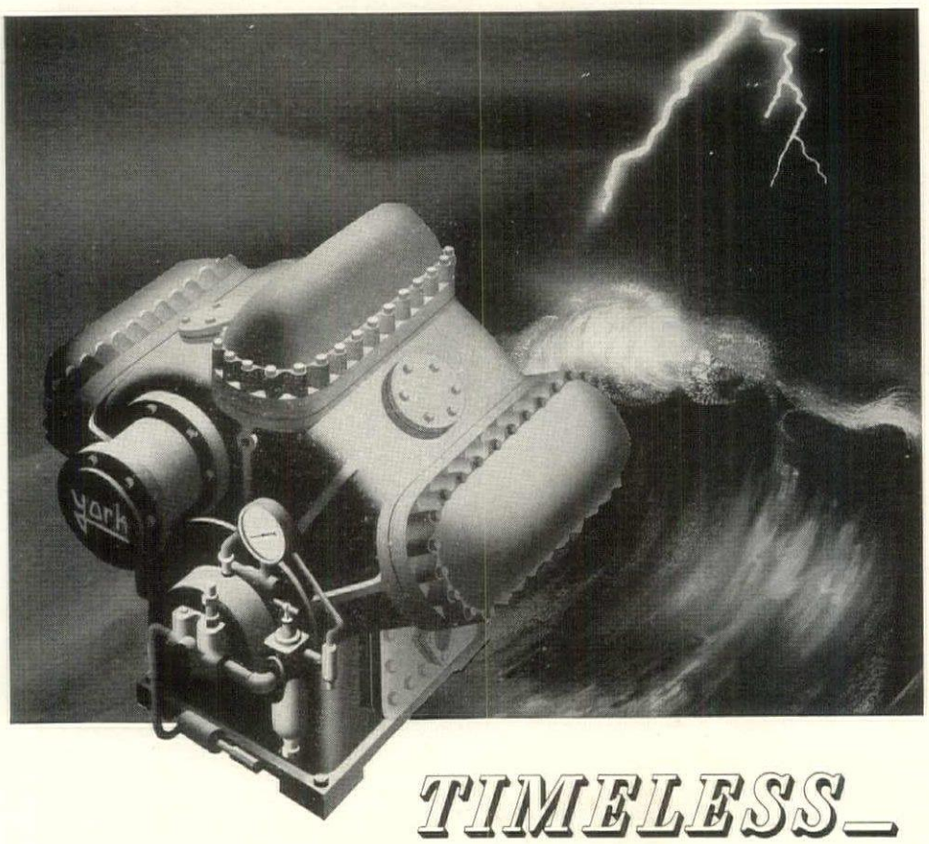
More interesting were the reactions to questions on professional charges. All were more concerned with services received or not received than whether the fee was cost plus or a percentage. Extras, apparently, were more irritating than any other single cost factor, and replies showed lasting resentment. Happiest of the clients was the engineering executive, whose house came to within sixteen dollars of budget. He also spoke enthusiastically of the careful manner in which problems of orientation had been worked out, and mentioned other items of the high quality professional service which had been rendered. Least happy was the landowner, who swore that next time he would get everything fixed up with a builder before going near an architect. Equally determined was one of the women, who gave the following answers:

Q. How was your architect selected?
A. He was a friend of the family.
Q. Aside from your architect, where did you get most of your ideas about your house?
A. From looking at houses in magazines.
Q. Did you consider modern?
A. No. I like to look at it, but couldn't stand it all year round.
Q. How would you select your architect next time?
A. I would buy a house already built, avoid my $4000 worth of extras and the disappointment of finding that the furniture wouldn't fit as I had been given to expect.
Q. If you had to use an architect, how would you select him?
A. I would decide on the style of the house, Early American, Colonial, or Pennsylvania Farm House, and then find the architect who handled that style best.

Many of the questions sent in by the audience showed equal dissatisfaction with the architect-client relationship: "Why do you ask for exact reproductions of certain periods and then insist on modern conveniences?" "Why do you retain an architect and then take the builder's advice on all matters?" "Why don't clients hire an architect for what he is instead of hiring him as their personal draftsman?"

Most important of the facts that emerged from the occasionally heated discussion was that architects' services will be easier to promote when the value and competence of those services is beyond question.

(Continued on page 84)



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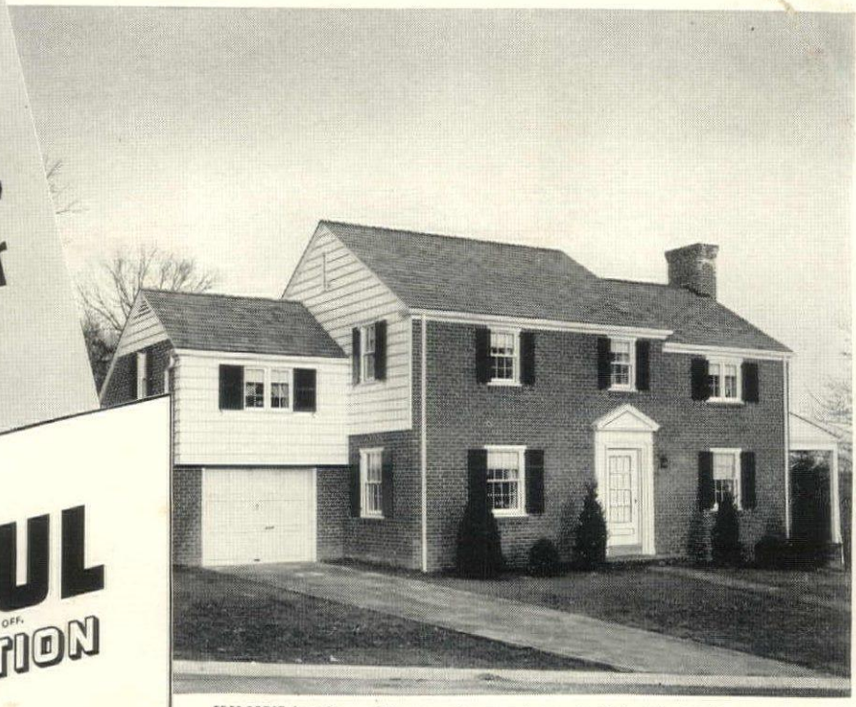
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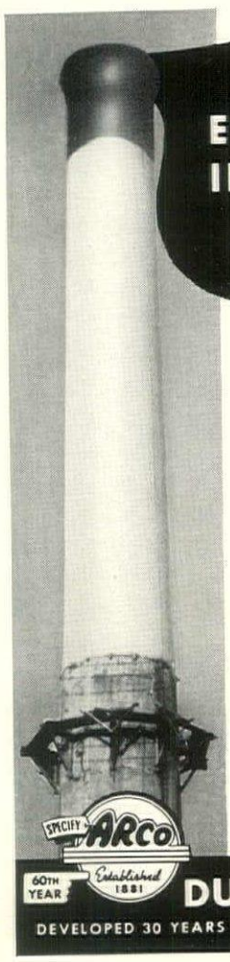


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FORUM OF EVENTS

(Continued from page 80)

AWARDS

To NICHOLAS CARONE and WILLIAM TALBOT, $1,000 awards in the American Academy in Rome prize competitions in painting and sculpture. Since conditions prevent the American Academy from sending fellows to Rome, the cash prizes are being awarded in lieu of fellowships.

To CARL P. ROLLINS, printer to Yale University for twenty years, the medal of the American Institute of Graphic Arts. The medal, awarded for the fourteenth time in the twenty-seven-year existence of the Institute, has gone in other years to Frederic W. Goudy, Henry W. Kent, Bruce Rogers and William A. Dwiggins.

To CHARLES SALADUNAS of Pratt Institute, the medal of the New York Society of Architects, awarded annually to a senior student with the best record of his class in architectural construction.

ORGANIZATIONS

H. A. MAGNUSSON of the Agriculture Department has been elected president of the Association of Federal Architects, succeeding K. W. Hartig of the Navy Department. Other new officers are Gilbert Rodier, vice president; I. C. Miller, secretary; Charles R. Black, Jr., treasurer.

PERSONALS

BERNARD J. HARRISON, JR. and ASSOCIATES announce the opening of offices for the practice of architecture at 599 Fifth Avenue, New York City.

The firm of LYNDON, SMITH & WINN has been dissolved and Maynard Lyndon and Eberle M. Smith are continuing their practice under the name of the original firm, Lyndon and Smith, at 208 Murphy Building, Detroit, Michigan.

THEO V. NICHOLS, architect, announces the removal of his office to 16828 Kinsman Road, Shaker Heights, Ohio.

DIED

HAROLD WADE DOTY, 45, architect, of Portland, Oregon. Except for a period in the Army during World War I, Mr. Doty spent the greater part of his life in Oregon. Chiefly known for his residential work, he was also interested in housing, city planning, and civic enterprises dealing with art and architecture. He was active in the Oregon Chapter of the American Institute of Architects of which he was a past president.

ARTHUR C. JACKSON, 75, architect, at Useppa Island, Fla. A graduate of Harvard University and the Ecole des Beaux Arts, Mr. Jackson worked with Carrere & Hastings from 1898 to 1907 and with LaFarge & Morris from 1909 to 1911. Since the latter date he practiced independently, devoting himself largely to the design of city and country residences. His architectural practice is being continued by his associates, Russell S. Johnson and Andrew Palmieri, New York City.

CHARLES DELEVAN WETMORE, 74, architect, in New York City. As a member of the firm of Warren & Wetmore, Mr. Wetmore worked on the design of the Grand Central Terminal, the Ritz, Commodore, Biltmore and other well-known New York hotels. He was a graduate of Harvard University and Harvard Law School.

HARRY WILCOX WACHTER, 72, architect, in Toledo. Mr. Wachter was the local architect with the firm of Green & Wicks of Buffalo which designed the first building of the Toledo Museum of Art. He was architect of the Washington Congregational Church, the Main Masonic Temple, the Y.M.C.A. Building, the new Civic Auditorium, the Commercial Bank Building and other Toledo public buildings. A graduate of Columbia University, Mr. Wachter became a fellow in the American Institute of Architects in 1938.

ALFRED HOPKINS, 71, architect, in Princeton, N. J. As president of the firm of Alfred Hopkins & Associates, Mr. Hopkins was well known for his designs of residences, farm and stable groups and bank buildings. He was a student of penology and drew the plans for several prisons in New York State and for the Federal penitentiaries at Lewisburg, Pa. and Terre Haute, Ind.

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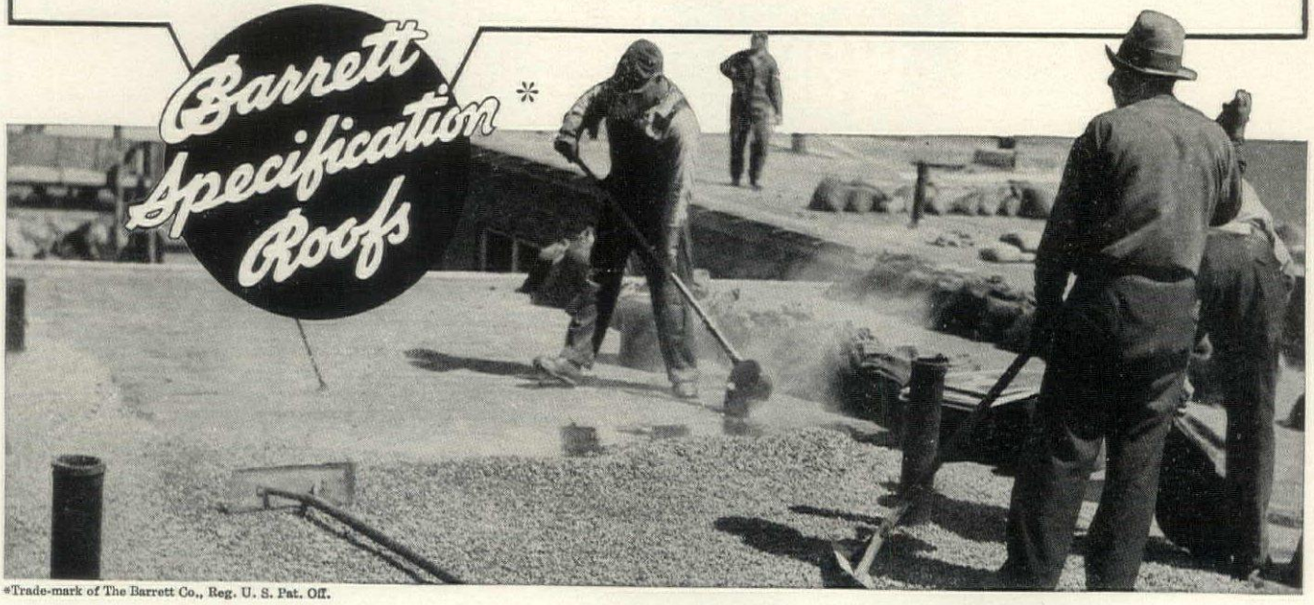
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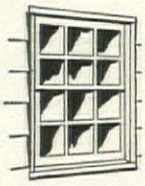


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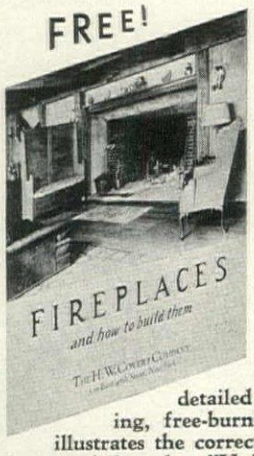
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NEW YORK CITY

BOOKS

(Continued from page 34)

our so-called better minds can point to a record of 40 years during which there has not been a surrender at some time to the perennial idiocy of blaming the machine for our current miseries.

Whatever Wright's faults, pettiness is not among them. He has lived, worked and written in the grand manner. So with his vanity. "I fully intend," he writes, "to be not only the greatest architect who has yet lived, but the greatest who will ever live. Yes, I intend to be the greatest architect of all time." If the judgment of posterity should fall short of this heroic boast, if it should turn out that it was beyond the power of our confused, mean and murderous age to turn out the "greatest" architect, Wright's magnificent tribute to Sullivan may still be applied to himself: "The essential contribution of Sullivan was one of heroism, one of faith in an ideal, an architectural ideal which after all is an expression of that life within. . . And the significance of his work lies in the fact that he, fundamentally, courageously like a prophet set about his ideal and did his 'damndest' until he died.

"The fact that Louis Sullivan's buildings were imperfect manifestations of his own ideal is no weakness of his, nor to be regarded as such by anyone. An ideal that can be wholly realized by any man in a lifetime is not worth striving for as an ideal. But his work in behalf of that ideal is forever valuable to his country. For God's sake let us be grateful . . . Now, what does it matter that we can build better buildings today than the buildings he built? Every great worker, every great man must be taken in true relation to the time in which he worked and sweated and was bled. And by any standard whatsoever brought, by intelligence, to bear upon his work or his life, he was a great man. He was a genius."

THE AMERICAN SCHOOL AND UNIVERSITY, 1941. American School Publishing Corporation, New York. 8½ x 11¼. 627 pp. $2.50.

The latest edition of a familiar and useful annual. Contains names and addresses of school architects, school superintendents and other officials, product information, and articles on various aspects of school planning. The advertising section is well arranged for reference use.

TAKING THE MYSTERY OUT OF BUILDERS' HARDWARE, by Adon H. Brownell. Hardware Age. 212 pp., illustrated. 8½ x 11½. $3.00.

A course, in three graded sections, for the hardware dealer or salesman. In the process of explaining the technique of properly specifying, selling and installing builders' hardware, it gives a great deal of information useful to the architect, especially in the selection and specifying of the various qualities and types available.

THIS IS GREECE. Hastings House, New York. 128 pp., 7 x 8¼. $2.50.

A collection of photographs by members of the American School of Classical Studies and their friends. Apparently assembled rather hastily, to take advantage of the attention being given Greece until about a month ago, the book is inferior in quality to those previously issued by the same publishers, but interesting nevertheless as a widely varied collection of photographs (mostly amateur) which are well above average. It is also pleasant to find a picture book on Greece which goes far beyond the customary collection of views of the classical monuments.

RINO LEVI, ARQUITETO, Servico dos Paises. Sao Paulo. 42 pp., illustrated. 8 x 10½.

A summary of the work of one of the better known Brazilian architects between 1928 and 1940. The buildings include houses, apartment buildings, cinemas and office buildings, and are all executed in the characteristic South American version of modern, which is perhaps more closely related to that of Italy than any other country. Material includes photographs, plans and a short introduction.

(Continued on page 92)

STOPS DRAFTS AND LEAKS—CUTS FUEL BILLS



IN BOYS TOWN

Illustrated is a recent Dormitory of the Father Flanagan "Boys Town", for which Leo Daley, Omaha, Neb. was the architect, and The Parsons Construction Co., also of Omaha, the General Contractors. Pecora Calking Compound was applied by Bissell Weatherproofing Co. of Kearney, Neb., to permanently seal building joints against moisture, dust and drafts. Present day specifications provide for adequate weather protection by calking all exposed joints. No better material can be used for this purpose than PECORA. Its record of performance since its introduction 33 years ago has been such as to warrant the fullest confidence of architects and builders everywhere. Pecora Calking Compound will not dry out, crack or chip when properly applied, and it will form a lasting bond between all building materials, similar or dissimilar.

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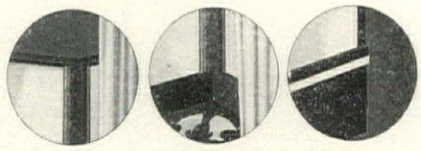
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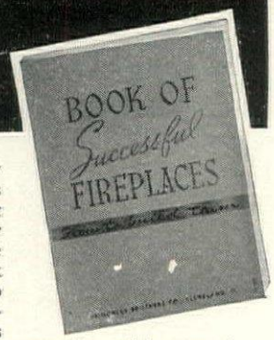
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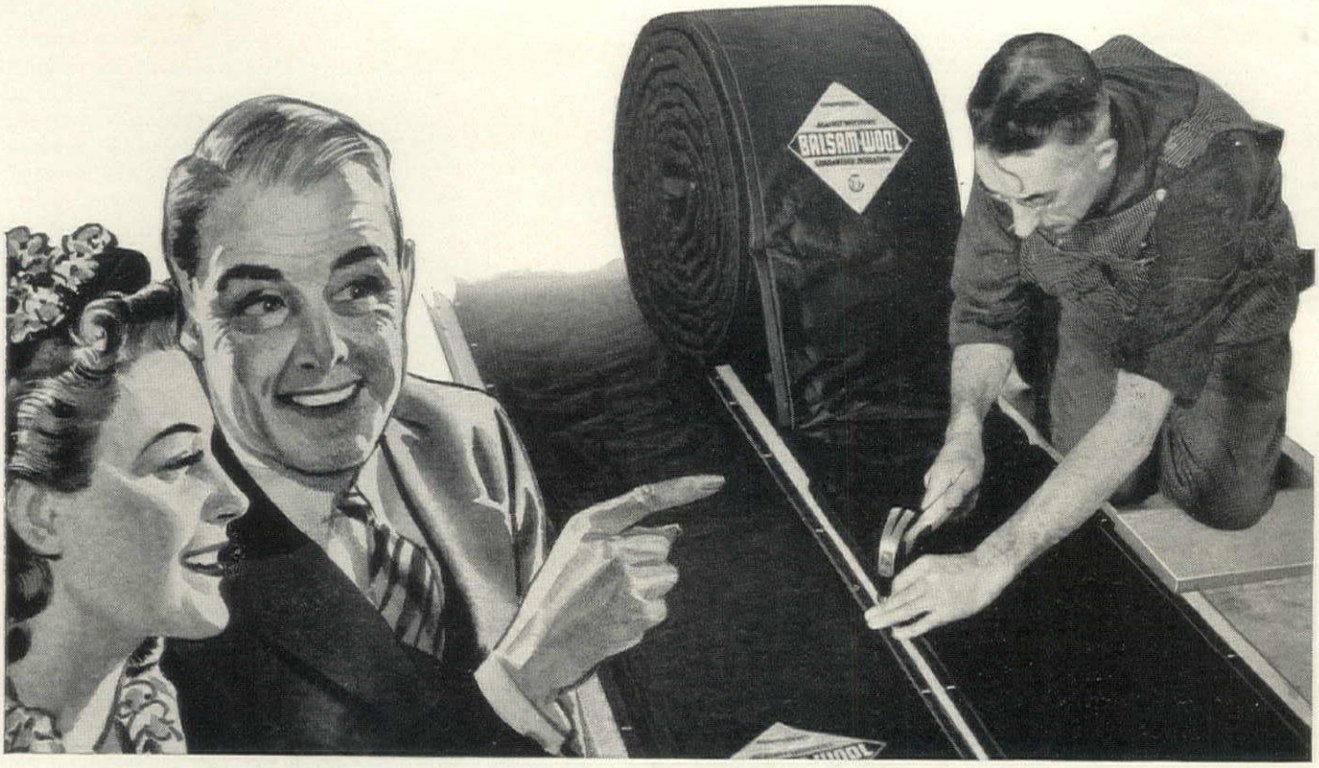
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BOOKS

(Continued from page 88)

THE GEORGE GREY BARNARD COLLECTION, Catalogue by Martin Weinberger. Robinson Galleries, Inc., New York. 109 pp., 62 plates. 10 x 14. $7.50.

The announcement of the offering of the Barnard Collection for public sale marks the liquidation of the third great U. S. collection this year, the others being those of Hearst and Clarence Mackay. George Grey Barnard enjoyed an international reputation as a sculptor, and it was known only to a comparatively few people that he was one of the first men in the country to stress the importance of Medieval art, and that his own collection of Romanesque and Gothic work was almost unsurpassed.

Barnard's interest in the art of the Middle Ages was aroused during his early studies in Paris, and from 1883, when he first went abroad, until his death, he was tireless in studying work of the period. During his years of teaching at the Art Students' League in New York he found that there were few examples in this country which might be used as examples for illustrating the technique of direct carving as practiced by the old masters. From the combination of necessity and personal interest his activities as a collector began. From about 1900 on, whenever he had the time and money, he scoured France and Belgium for the finest examples that could be discovered, and over a period of years he assembled in Paris a growing and magnificent collection which he called "The Cloisters." In 1925 it was acquired by the Metropolitan Museum of Art with funds donated by John D. Rockefeller, Jr. and Barnard immediately began the second collection, which concentrated on individual objects rather than cloisters. It is this material which is now on sale, and very handsomely illustrated in the catalogue. Among the objects shown are capitals, paintings, statues, chests, doorways, and metal work. It is planned to use the proceeds of the sale to construct in marble Barnard's enormous Rainbow Arch, part of the great Monument to Democracy on which he labored until his death in 1938.

FLUORESCENT LIGHT AND ITS APPLICATION, by H. C. Dake and Jack DeMent. Chemical Publishing Co., Inc. 256 pp., illustrated. 6¼ x 9¼. $3.00.

The development of fluorescent lighting from a theatrical trick and laboratory toy to a flourishing industry has taken place only within the past few years, and it has created the need for an authoritative source book of information. This volume, the most recent comprehensive study available, covers theory in detail, discussing the historical aspects of luminescence, the types of available minerals and their locations, and the sources of ultraviolet radiations. Fixtures and architectural applications are not covered. Considerable interest has naturally been aroused in the fluorescent minerals, and the existing deposits are fully listed and their qualities are described. The authors have also included chapters on luminescent gems, the locations of the best collections of minerals, and the uses of ultraviolet light in archaeology, medicine, chemistry, microscopy, mining, prospecting and the theater. There is a bibliography, author index and subject index.

FIRE FROM THE AIR, The ABC of Incendiaries, by J. Enrique Zanetti. Columbia University Press. 55 pp. 4 x 6½. 50 cents.

A rather horrifying, but, in these days, useful survey of the properties and composition of incendiary bombs and the protection against them. The author is a professor of chemistry at Columbia University, and the approach is primarily that of a chemist who is well informed on military applications. Combustible materials discussed include oils, sodium, potassium, phosphorus, magnesium, aluminum, and standard incendiary mixtures.

As a service to interested readers THE ARCHITECTURAL FORUM *will undertake to order copies of books not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable to* THE ARCHITECTURAL FORUM.

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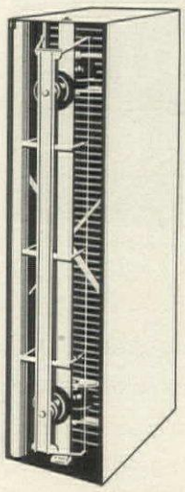
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From the day the Gilman store opened, soot and smoke drawn through the duct system created acute problems of keeping walls, ceilings, furniture, merchandise and wallpaper displays clean. Mechanical filters proved ineffective in removing soot before it reached the store interior.

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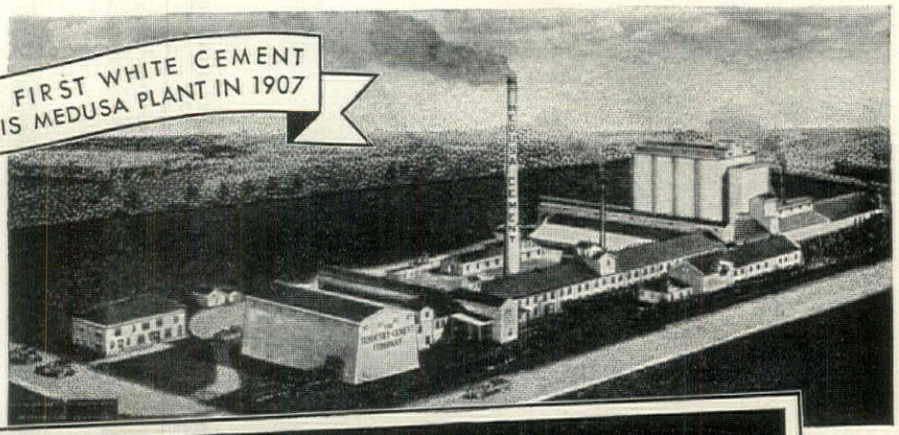
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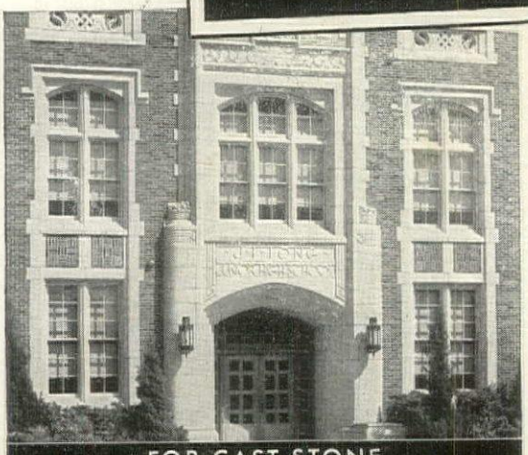
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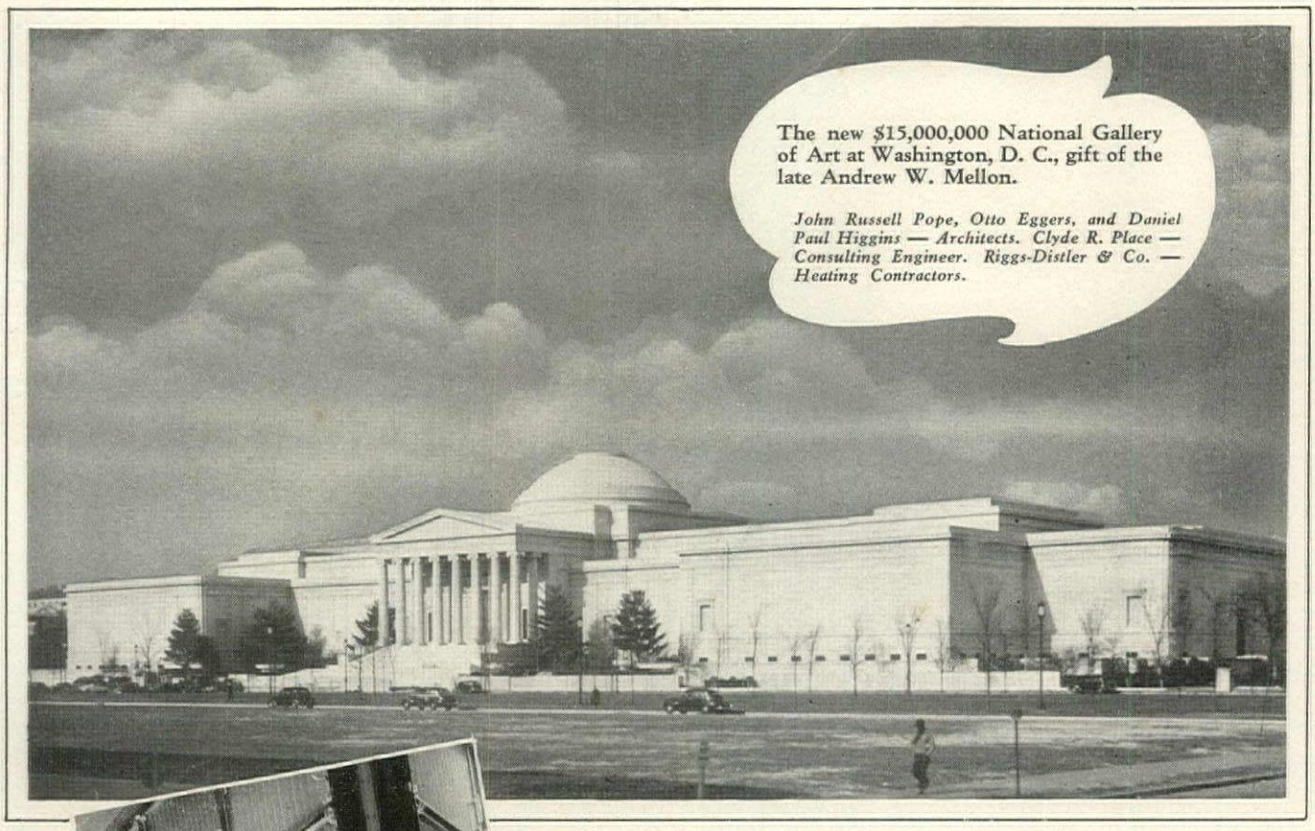
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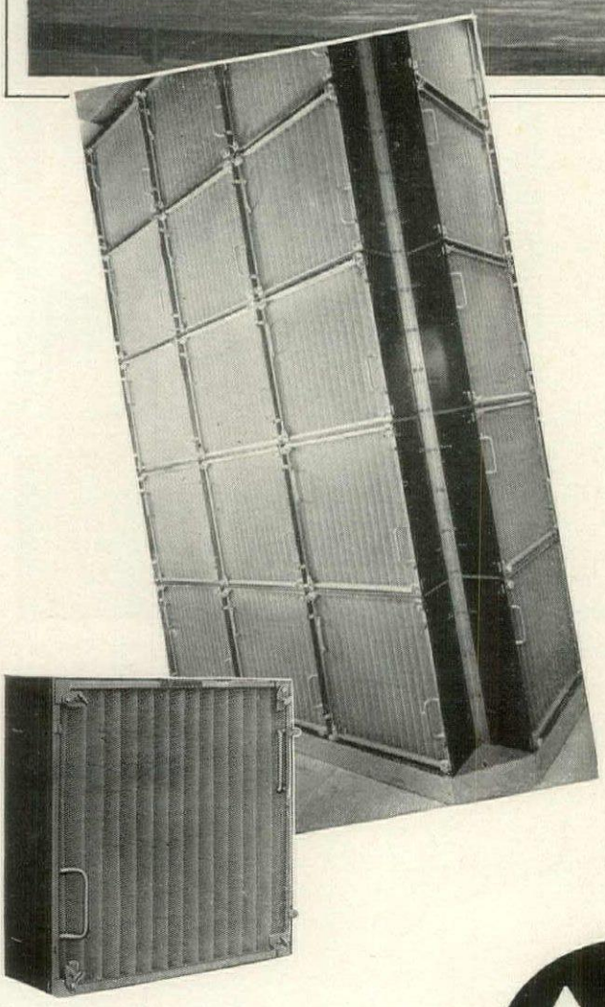
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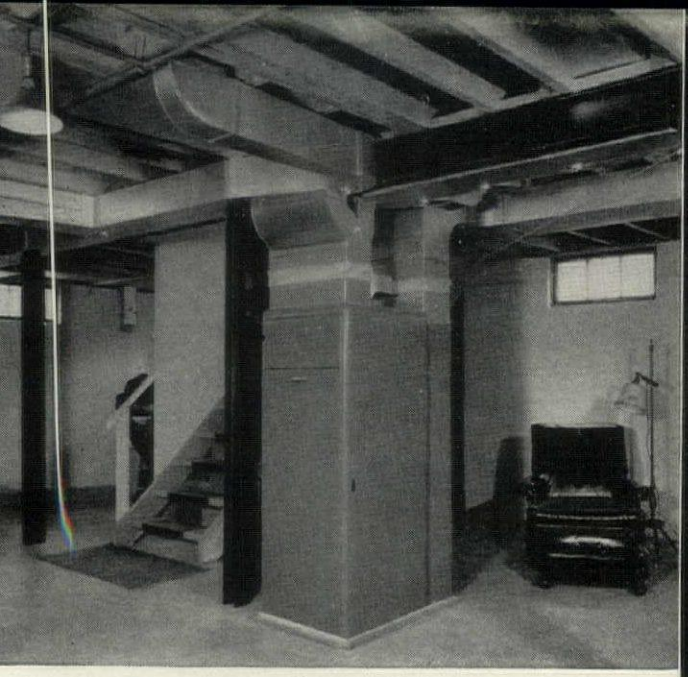
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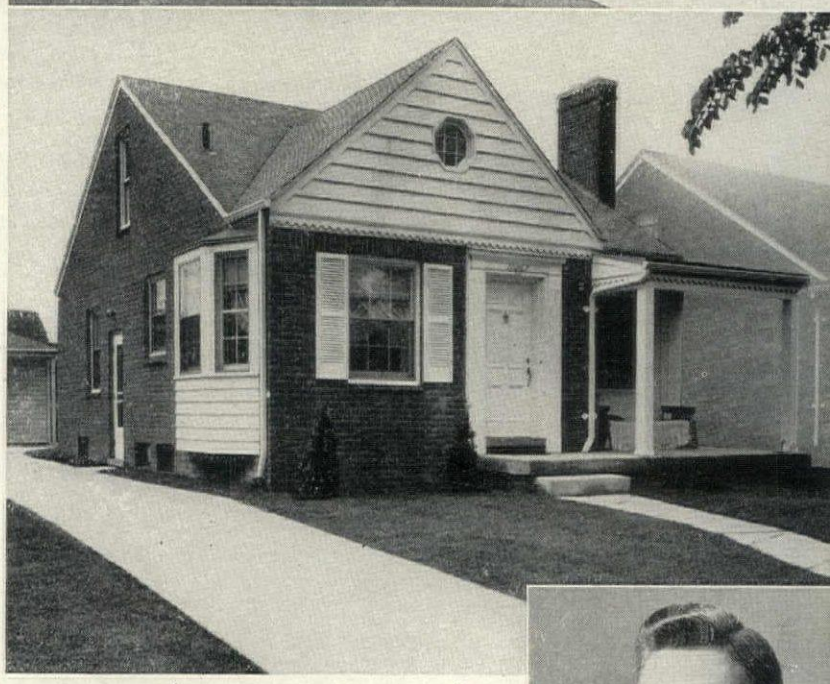
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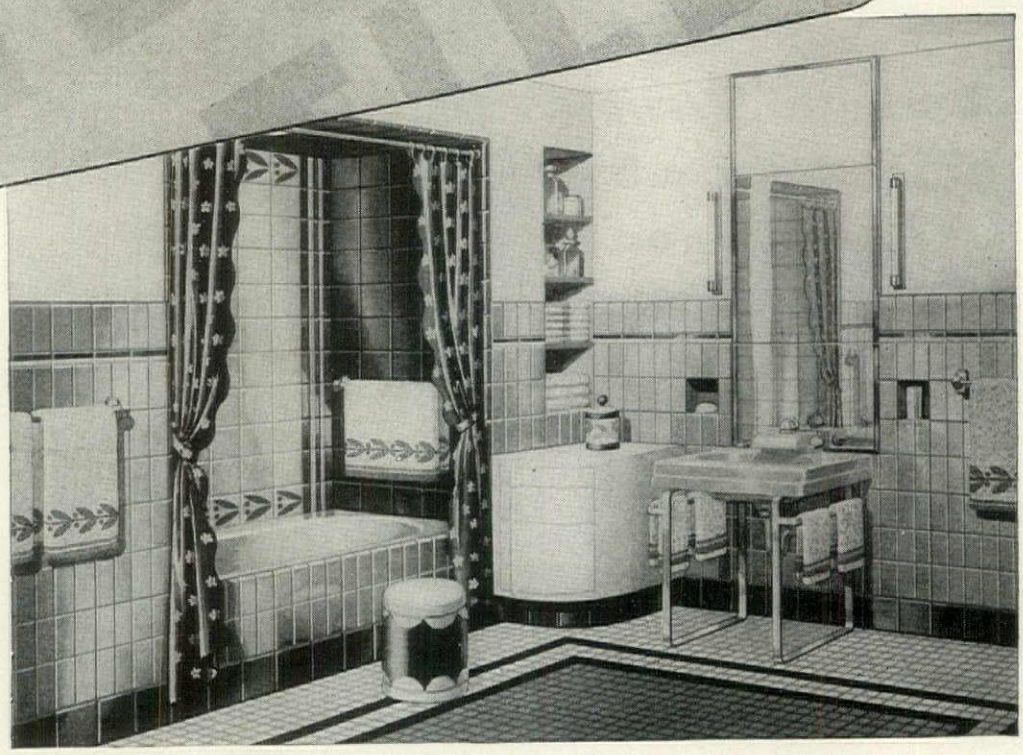




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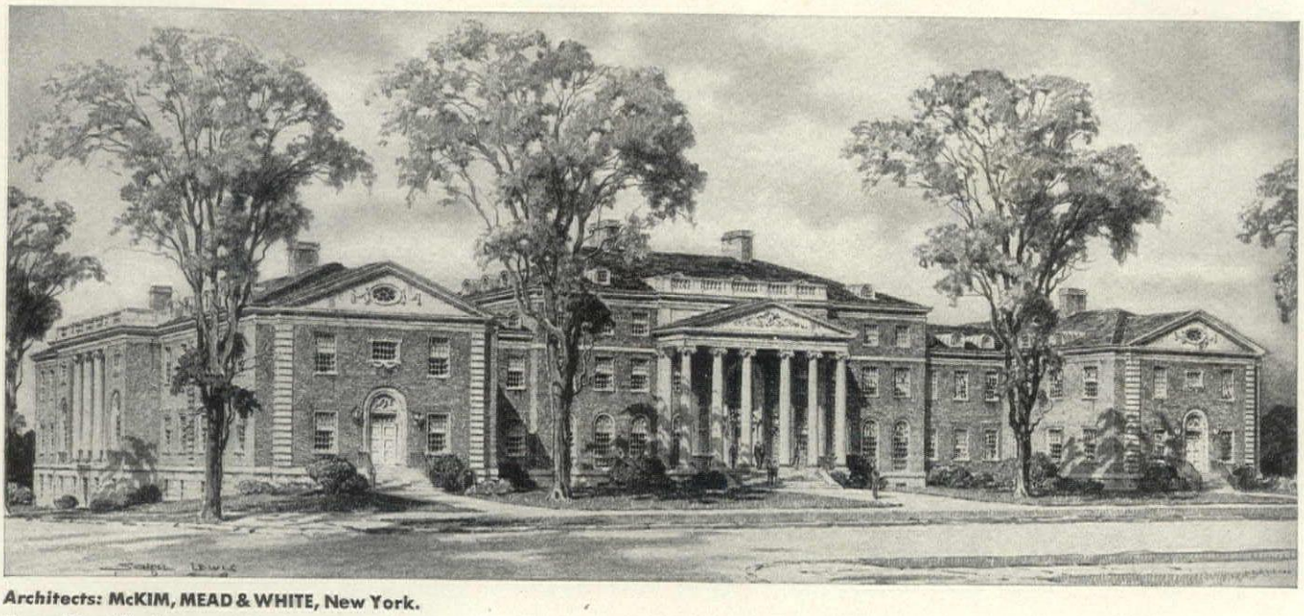
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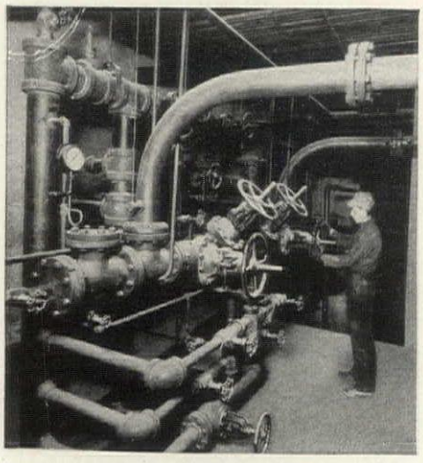
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VALVE DETAILS: SCHOOL BUILDING



Architects: **McKIM, MEAD & WHITE, New York.** ***Consulting Engineers:*** **(Plumbing, Heating and Ventilating) TENNEY & OHMES, New York.** ***Plumbing and Heating Contractors:*** **C. H. CRONIN, INC., Boston.**



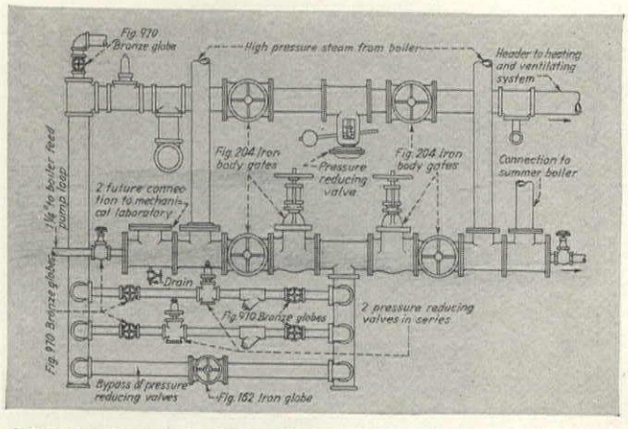
Main steam headers from two 150 h.p. boilers which are equipped and set up for class demonstration during actual service.

New $1,250,000 Waterman Memorial, University of Vermont, Burlington

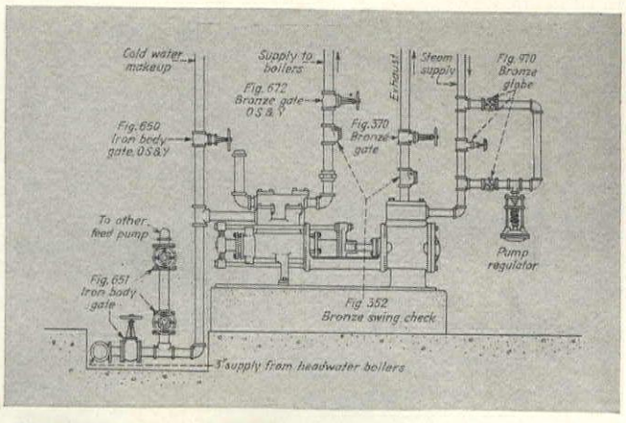
Designed primarily as an administrative center, this new $1,250,000 Waterman Memorial building on the University of Vermont Campus will also house a number of activities now occupying much needed space in other buildings. It will be one of the largest, best appointed and most modern educational units in New England.

Although no special problems were involved in planning the plumbing and heating installations, the equipment and layout conform to the best and most modern practice, since this plant will be used for observation and test by the engineering classes.

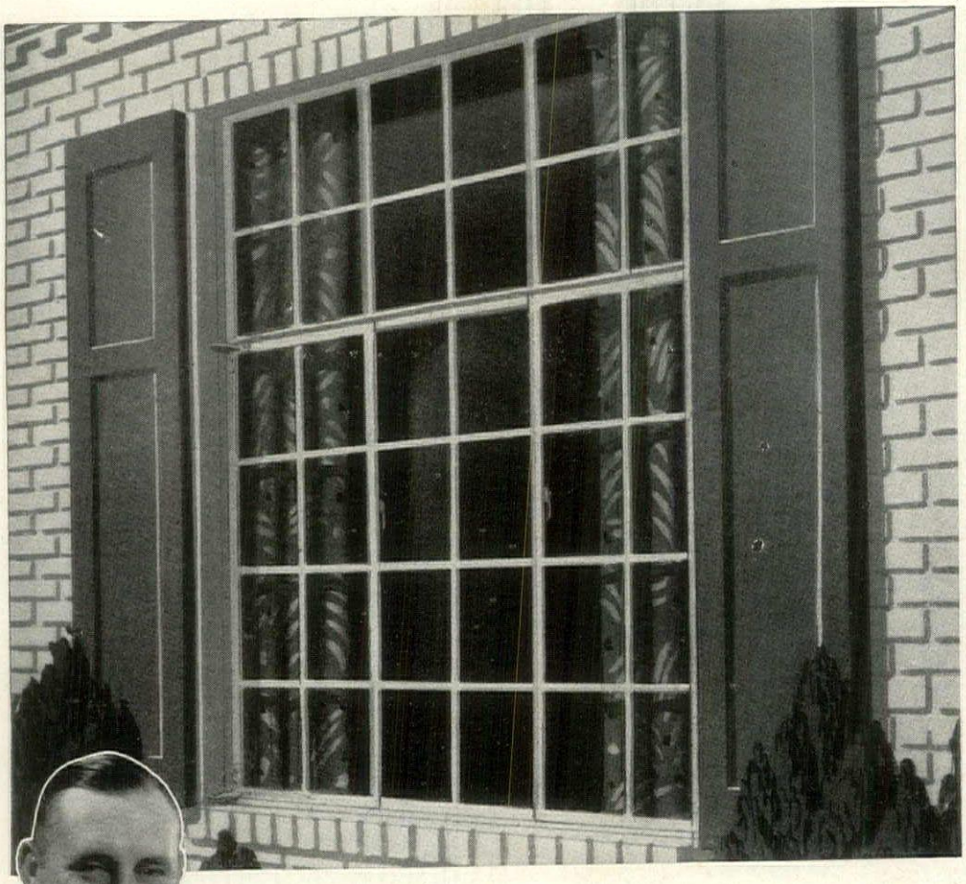
Student engineers will have an opportunity to see in service a wide variety of Jenkins Valves, from giant Iron Body Gates to tiny Bronze Globe Valves. As usual, prompt delivery of all Jenkins valves was obtained from a reliable local supply house. Another example of the slogan—"In Valves, *Jenkins* Gives You Everything".



Detail of main steam header installation, showing placing of Jenkins Iron Body Gate and Globe Valves, and Bronze Globe Valves.



Detail of boiler feed pump installation, showing steam supply and return, feed water supply and discharge connection with appropriate use of Jenkins Iron Body and Bronze Globe, Gate and Swing Check Valves.





the man who made his reputation with *unusual* Steel Windows

A CERTAIN builder in Pittsburgh sells every house he builds—as fast as it is completed. His organization has the enviable reputation of building houses that *are different*.

When questioned about his success he said, "My architect talked me into building houses around a dominating window scheme. He designs each house to take advantage of the best view. He found we could get a pleasing variation in large steel windows without running up the cost . . . and without duplicating windows very often.

"Buyers took to the idea at once. It gives houses distinction and originality. Interiors offer better opportunities for unusual decorations and the added value of attractive windows enables us to get better prices for our houses."

This man builds homes in the medium and low-priced fields. Competition is stiff—but he has learned the knack of using steel windows to make his houses more desirable.

Leading makers of steel windows, who are proud of their craftsmanship, use U·S·S steel sections for superior strength and quality. Write us for any information you need about steel windows.



More light. Steel casements increase glass area as much as 30% for the same size wall opening.



Easy washing. Both sides of steel casements can be washed safely from inside the room.



No sticking. Steel casements operate easily even when wet. No cords or weights to get out of order.



Better ventilation. Like the windows in your car, steel casements can be set to catch all the air in motion or to let out stale air.

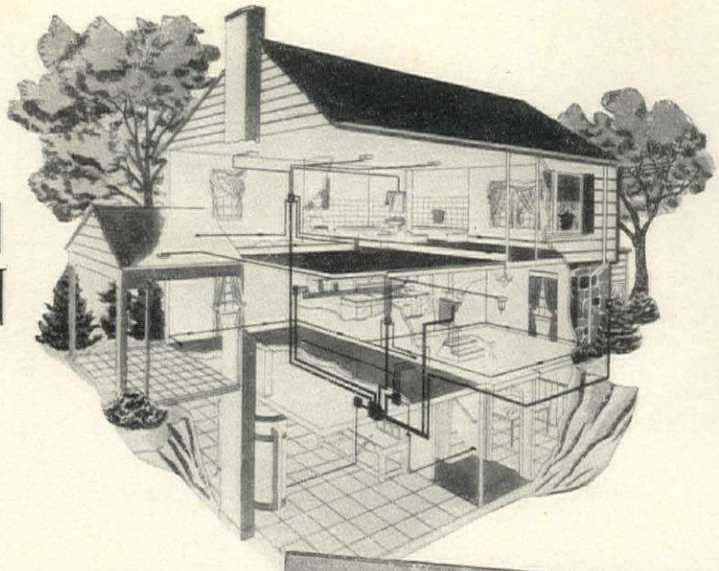
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COLUMBIA STEEL COMPANY, *San Francisco*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
Scully Steel Products Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

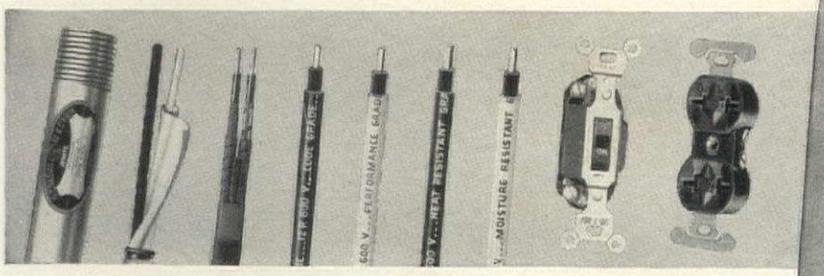
USS

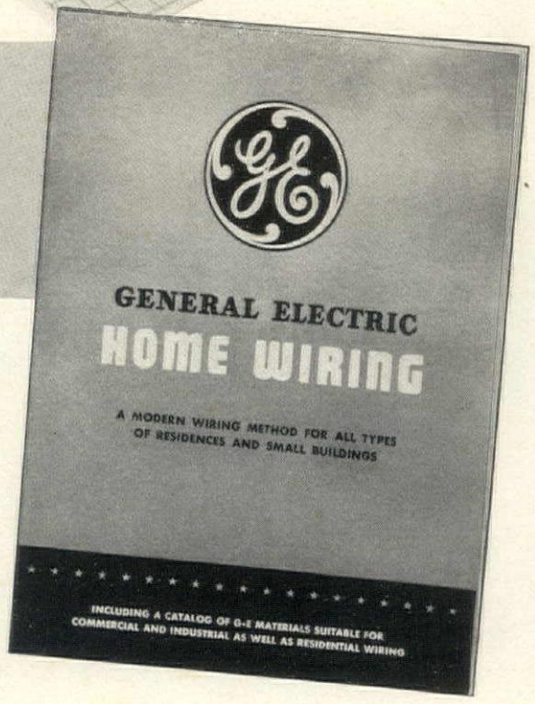
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This modern method of wiring can be adapted to fit any size or type of house. It assures plenty of outlets and large enough wire to enable current to reach outlets with proper pressure. It provides protection of circuits with fuses or circuit breakers located on the first and second floors.

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A Handbook on G-E Home Wiring is available which will give you complete information on it and will help you when writing specifications. For a copy mail the coupon.



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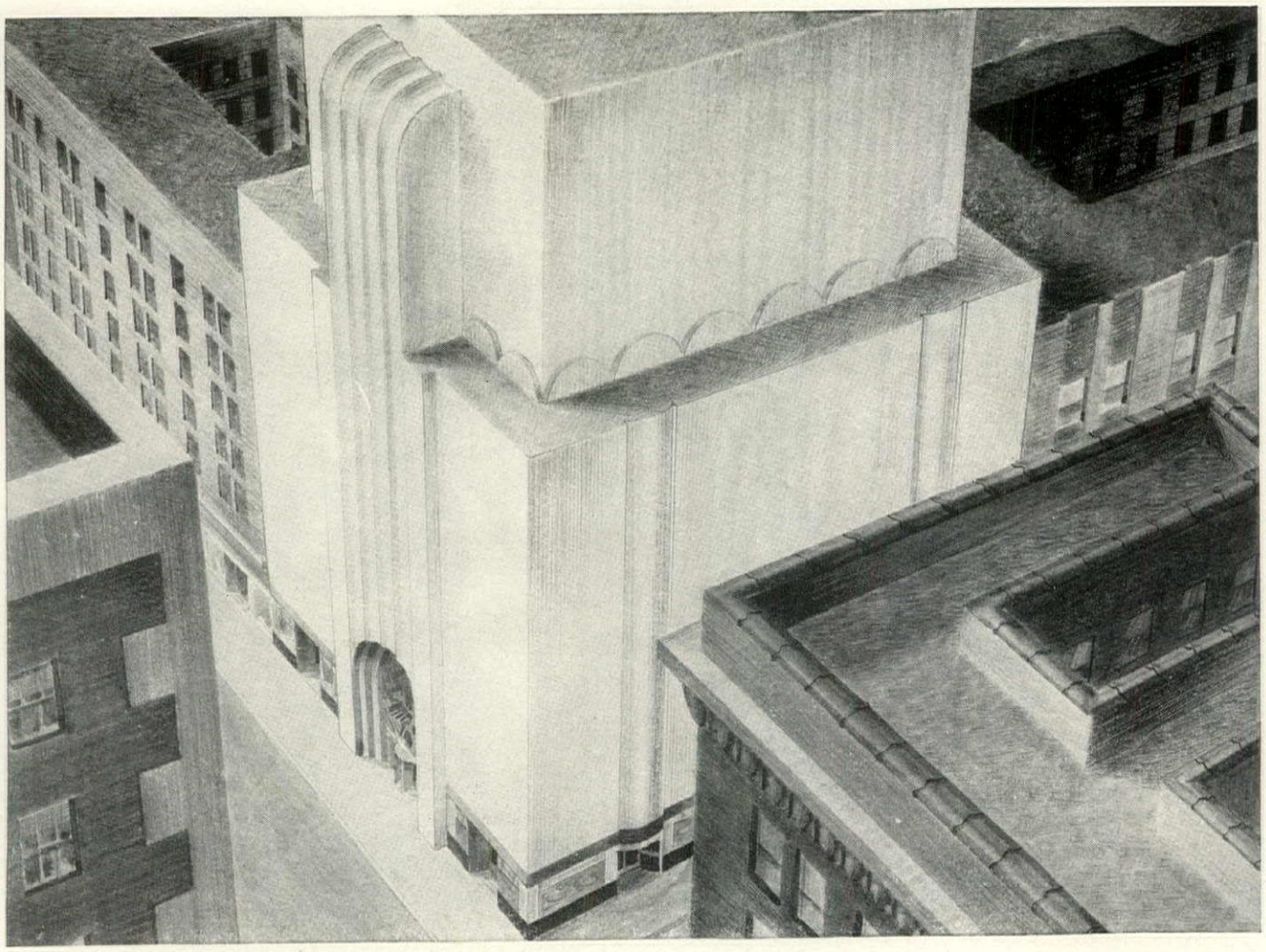
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GENERAL ELECTRIC



Freed of the shackles of space

A COMMON PROBLEM for the architect is to design a building to cover entirely a valuable site which does not readily adapt itself to an orthodox design.

The owner of the site quite naturally desires to have available as many cubic feet of usable space as may be achieved by a design which will provide good ventilation and light. A good design can save your client thousands of dollars a year, while a faulty design can lose as much.

And so—the ideal to be achieved is that every cubic foot, no matter where located, be of the same use or rent value . . . and that this value be the highest for that market. Corner rooms at the highest value because of light and cross-ventilation . . . middle rooms at less value . . . and rooms on light wells at low value . . . are the monuments of either yesterday, or the lack of vision of the architect—in freeing himself from his shackles through air conditioning and fluorescent lighting.

But the ideal of comparative equal-value space can be achieved with windowless buildings. They have proved their merits as factories, offices, and even stores.

Modern air conditioning for winter and summer, properly designed, will give perfect ventilation at proper temperature and humidity with maximum oxygen in air free of excessive concentrations of tobacco smoke, disagreeable dust and pollen. And external noise and distraction are eliminated.

Fluorescent lighting has come to be accepted, even desired, over sunlight. Two particular advantages are: (1) uniform illumination levels of *daylight quality*, no matter what the light conditions outside; and (2) low heat radiation, allowing increased economy in operation of the air conditioning system.

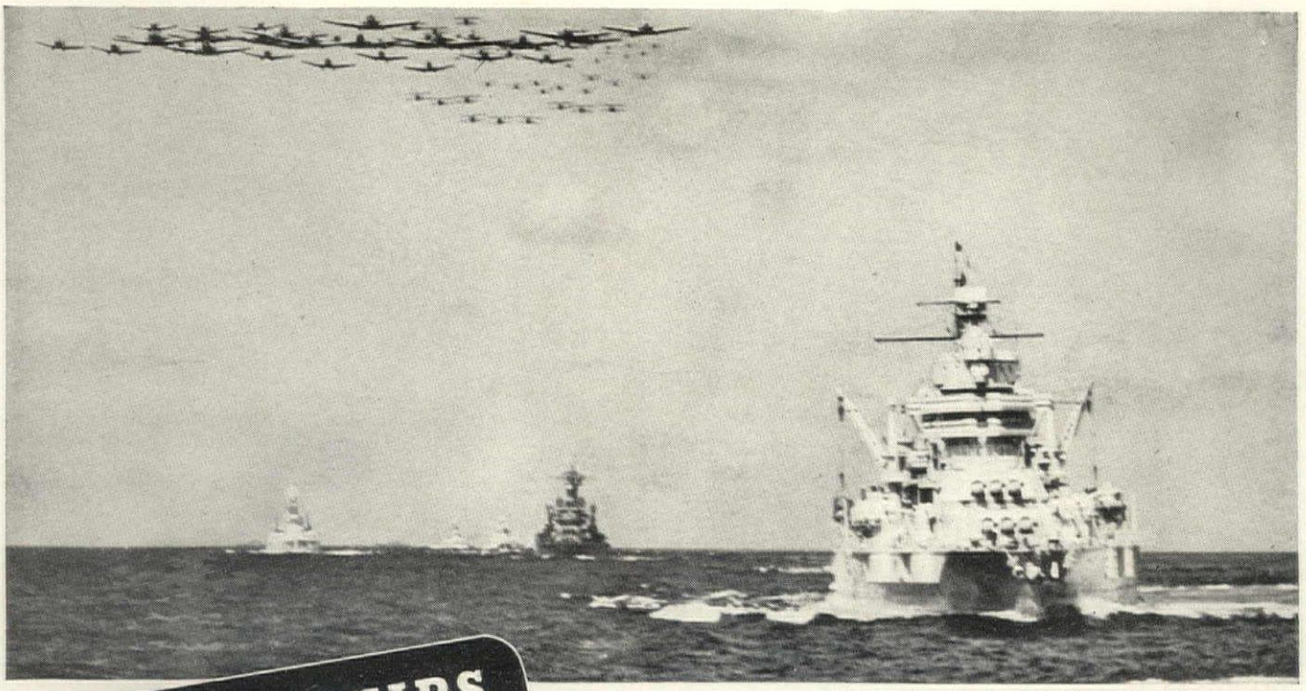
Among the most important cost considerations in the windowless plant is the fact that *reduction in heating costs in the winter offsets the additional cost in summer months of both air conditioning and lighting.*

No need for light wells on the inside of an office building. No need for H and E construction. And in place of the awkward limitations of windows, an infinite variety of decorative effects can be obtained, both inside and out. So air conditioning and fluorescent lighting have freed architects from the natural elements—have opened the way to a new era in design!

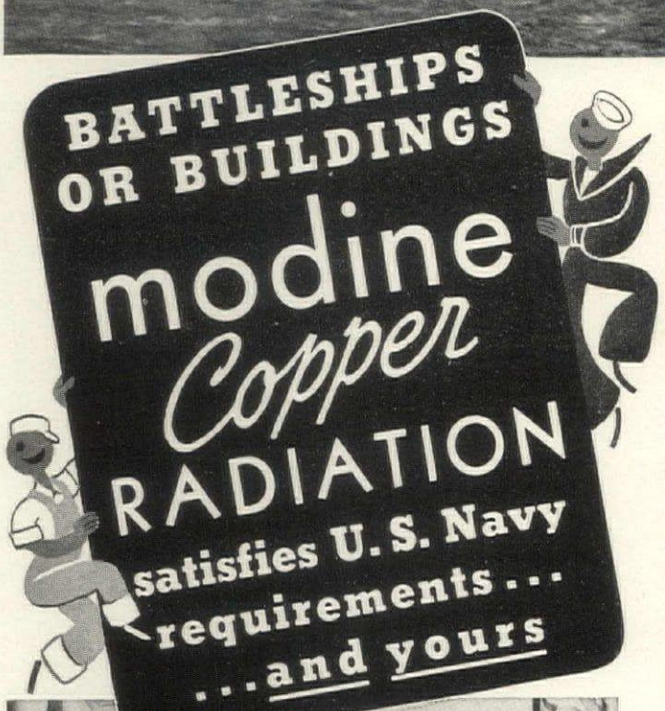
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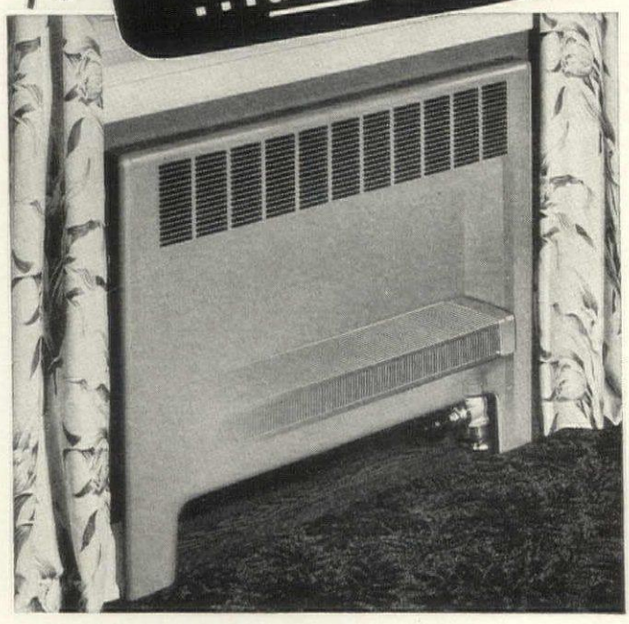
Kinetic Chemicals, Inc., the manufacturers of "Freon"* refrigerants, specified by the careful architect because they are safe and efficient.

**"Freon" is Kinetic's registered trade-mark for its fluorine refrigerants.*



Official U.S. Navy Photograph





Your Uncle Sam is particular. Especially so about radiation for the Navy's fighting ships. The aircraft carrier *U.S.S. Saratoga* has Modine Copper Convectors. The *U.S.S. Indiana*, a 35,000-ton battleship of the *North Carolina* class, now under construction, will be fitted out with Modine Convectors, as will fourteen of the latest type destroyers.

The Navy's convector problem is tougher than yours. Convectors must be tougher, too—to stand up under salt air, corrosion, vibration and rough sea-going usage. Space is limited. Excess weight is not wanted. Vast extremes and constant changes in temperature are met in cruising from the Tropics to the Arctic Circle.

Enduring, corrosion-resisting copper gives the Modine heating unit remarkable compactness and light weight, with ample capacity. Sound design makes it leak-proof. Copper fins, *metallically bonded* to tubes, prevent intra-corrosion, preserve original heat transfer capacity. The result is fast, balanced *precision heating* instantly responsive to automatic control, with the flexibility to meet severe demands caused by sudden changes in temperature. Reason enough to *specify Modines*—in homes, apartments and hotels.

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MANUALLY REMOVABLE ENCLOSURE FRONT

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***And this is an understatement of their life!**

This is why: No guesswork here, except as to how much *longer* than 30 years these shingles will last! For thousands of squares of J-M Asbestos Shingles applied 30 years ago are still in service, good as new. No evidence that they won't last thirty—fifty—sixty years more! But since we can prove only 30 years . . . PLUS . . . that's all we're willing to claim.

These beautiful, colorful, textured J-M Asbestos Shingles with true American Method appearance . . . and AT NEW LOW PRICES!

NEWS, and big news for architects and builders! The new *American Colonial* Shingle—built to last 30 years* *plus*—is now available at the lowest price in history for a J-M Asbestos Roof of American Method appearance!

Here is a shingle that combines all the time-tested advantages of asbestos and cement with new beauty, charm and color.

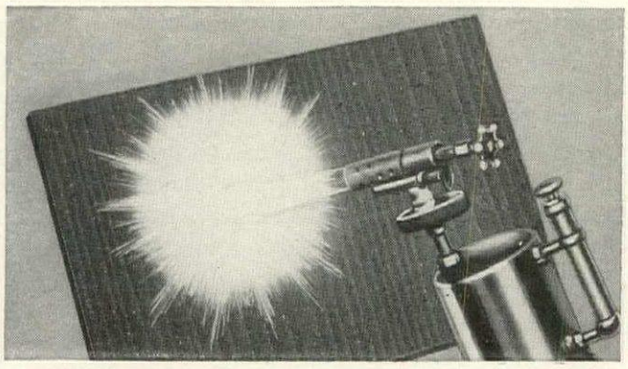
No longer is the asbestos shingle dull and drab! Actually, the new American Colonial Shingle looks like fine weathered wood. It has the deep texture and graining . . . the clean-cut shadow lines . . . that add the interest and charm of true American Method appearance.

If prospective home owners ask for *color*, there's one that fits every architectural style—a soft green, a warm red, a rich black, in handsome, blended shades. And for homes where neutral tones are desirable, there are also a natural gray and a white.

Like all J-M Asbestos Shingles, the new American Colonial is fireproof, rotproof, weatherproof. No preservative treatment is ever needed. Roofs stand up year after year without periodic maintenance.

J-M American Colonials are as simple and economical to apply as an asphalt strip—a fact proved by actual tests. They are self-spacing, require no "trick" fasteners, no complicated starters. Combined with the new low prices, this feature means that, for as little as 50¢ per month more in F.H.A. payments, home owners can enjoy the beautiful, fireproof, permanent qualities of a roof of J-M Asbestos Shingles!

Why not get the whole story? Send for beautifully illustrated brochure showing *American Colonials* in full color on various types of homes. Just mail the coupon.



FIREPROOF! Even when subjected to the intense heat of the blowtorch, the new J-M American Colonial Asbestos Shingles will not burn! What better protection can you offer home owners against the danger of roof-communicated fires?

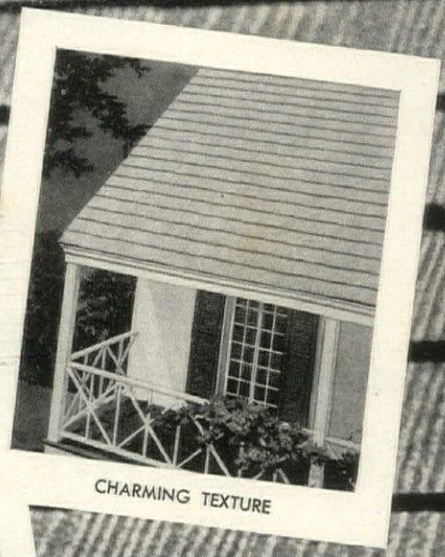


ARCHITECTS and builders agree that the new J-M American Colonial Shingle scores a hit with home owners! Typical of the developments all over the country where these beautiful new shingles are being used is this one near Washington, D. C.

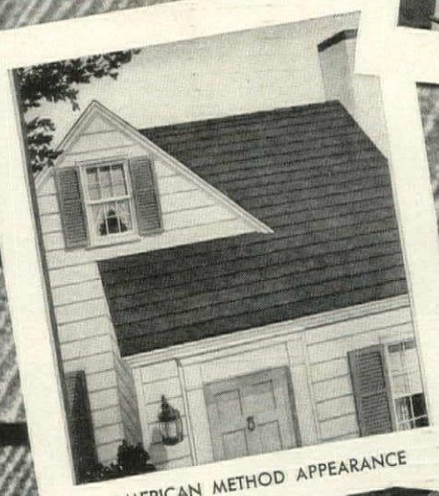
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AMERICAN METHOD APPEARANCE



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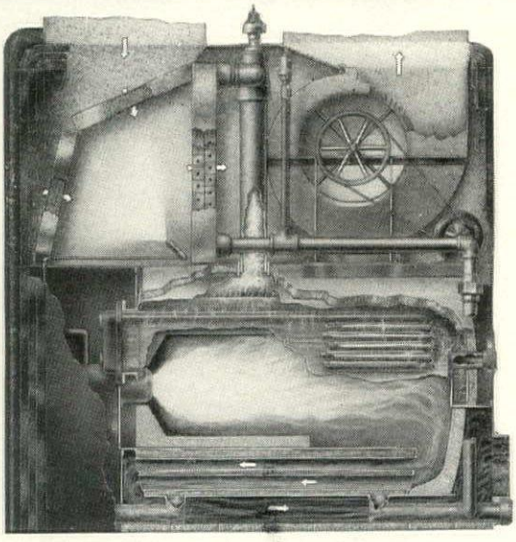
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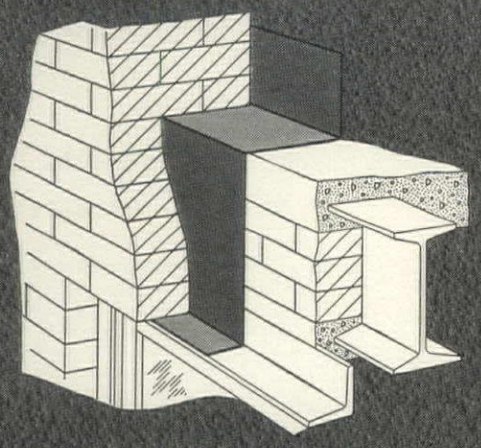
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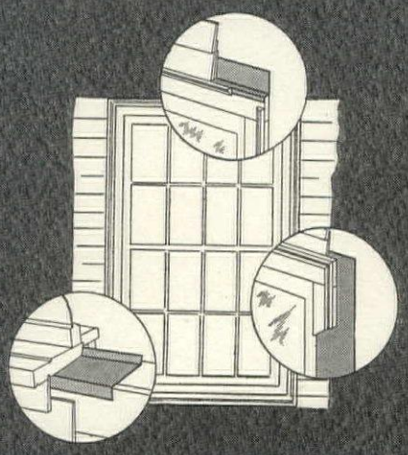
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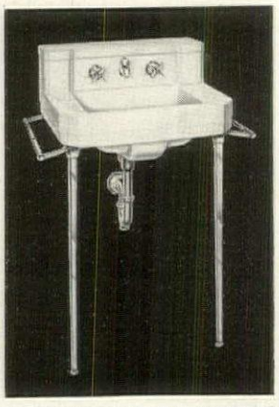
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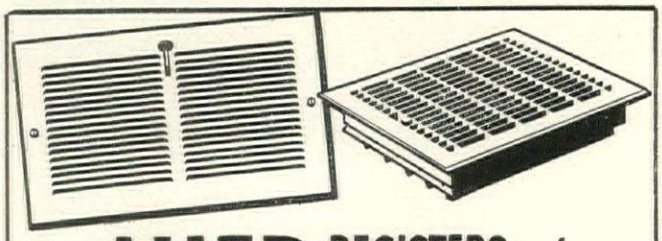
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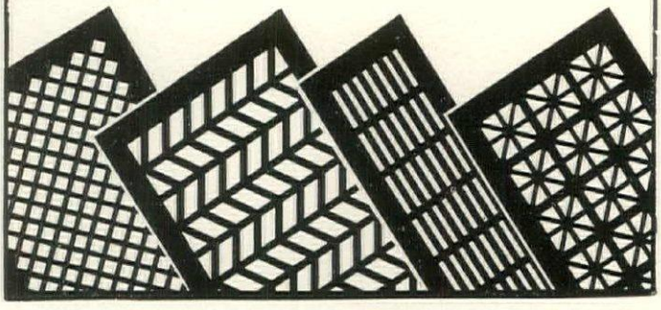


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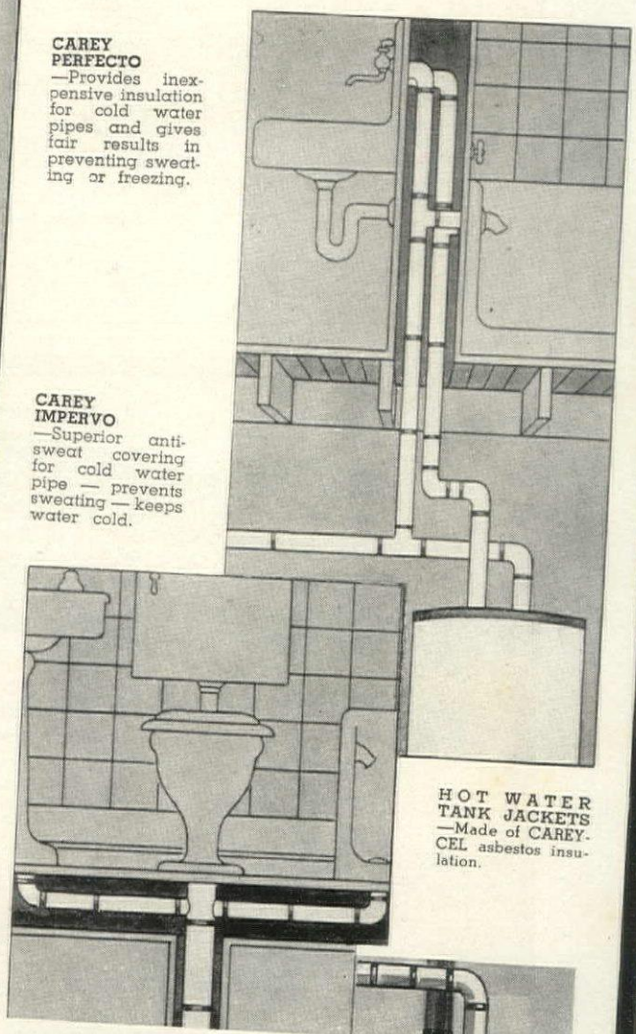
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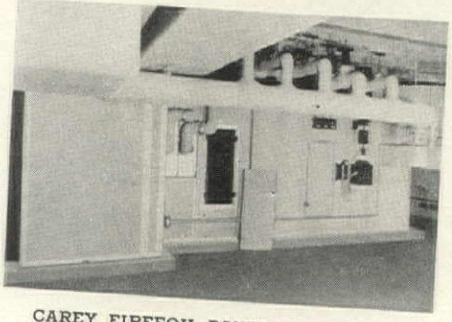
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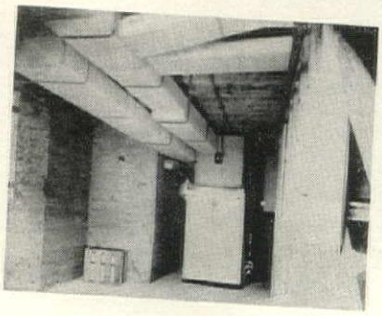


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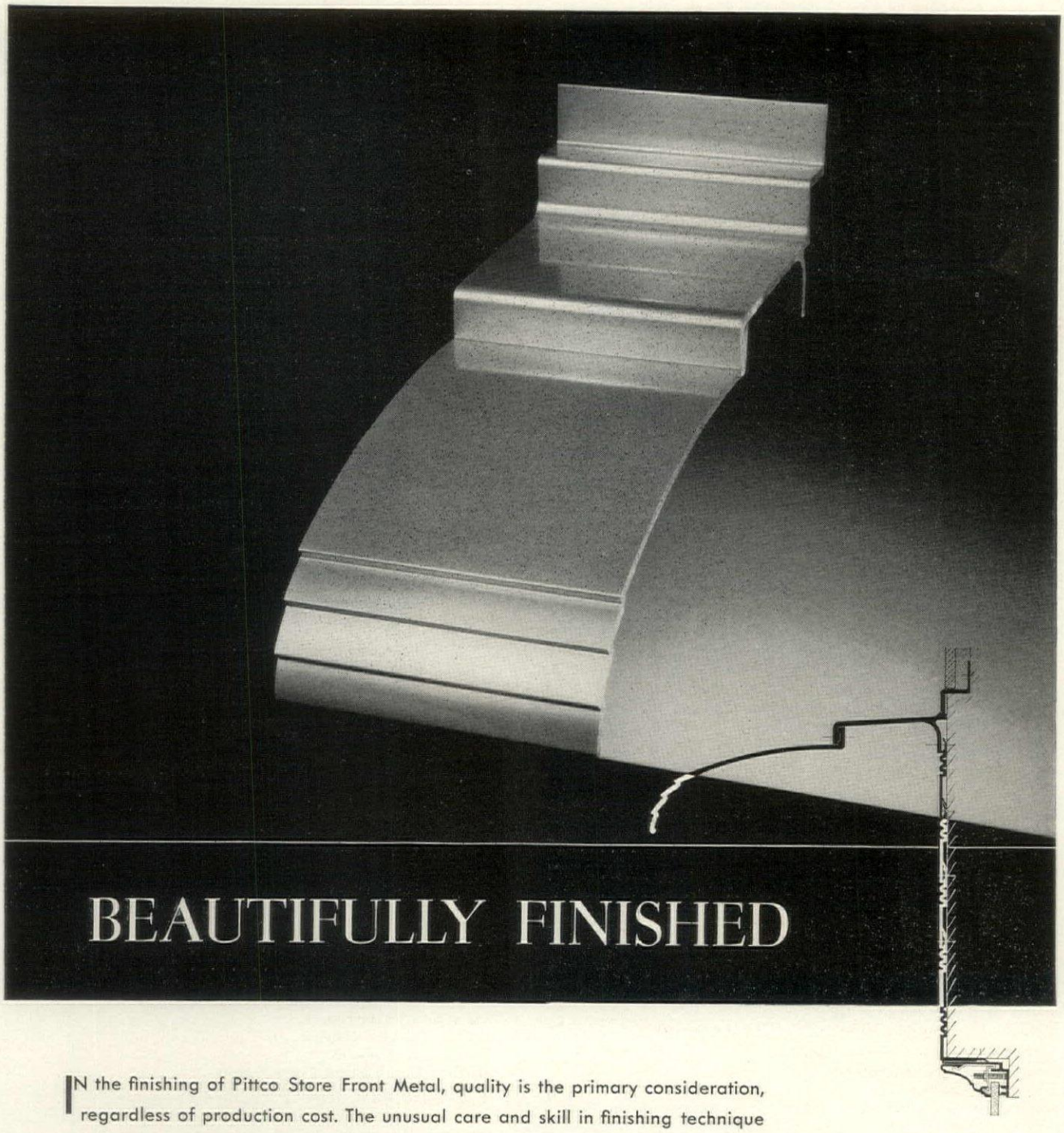
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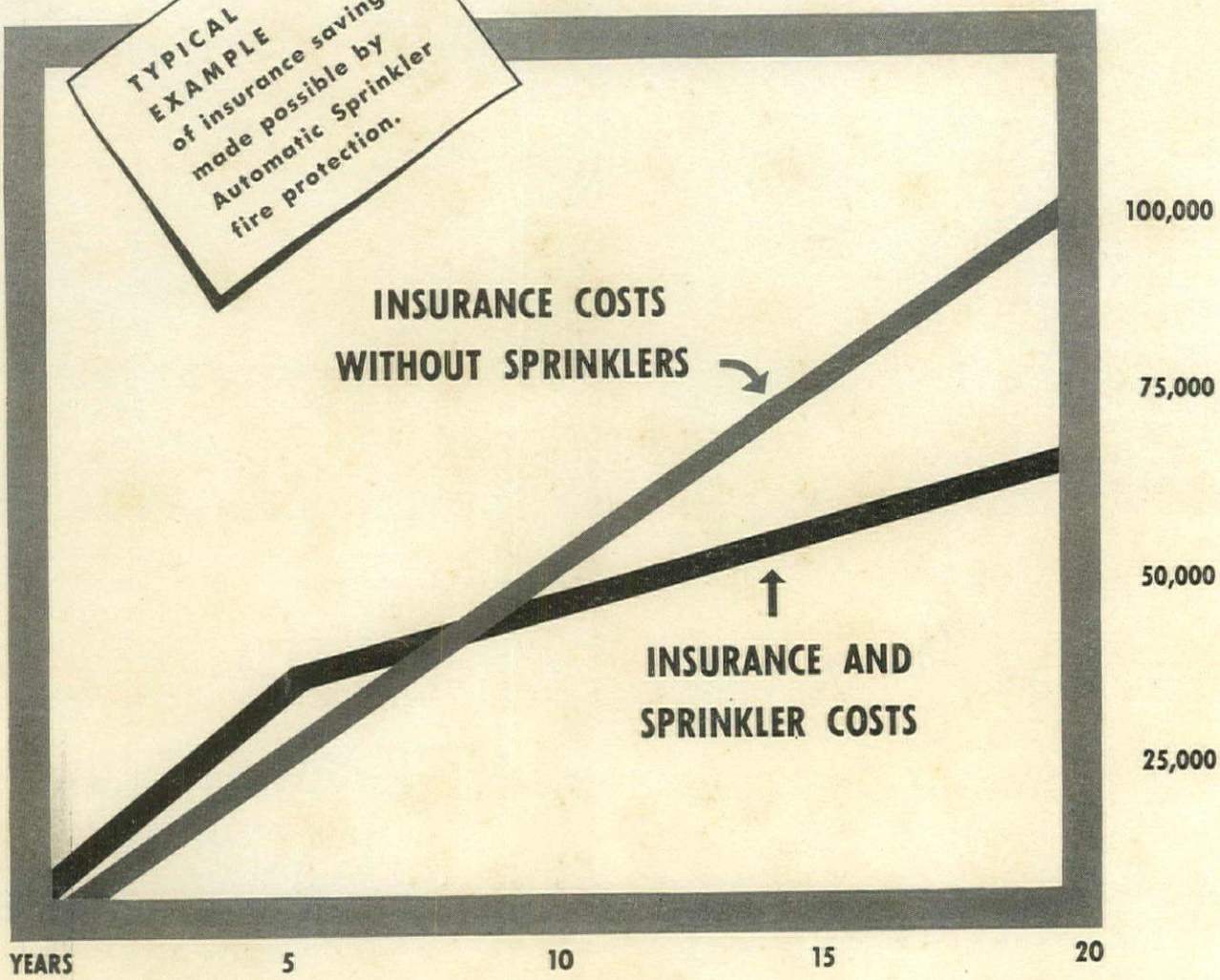
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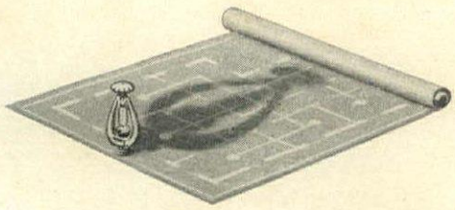
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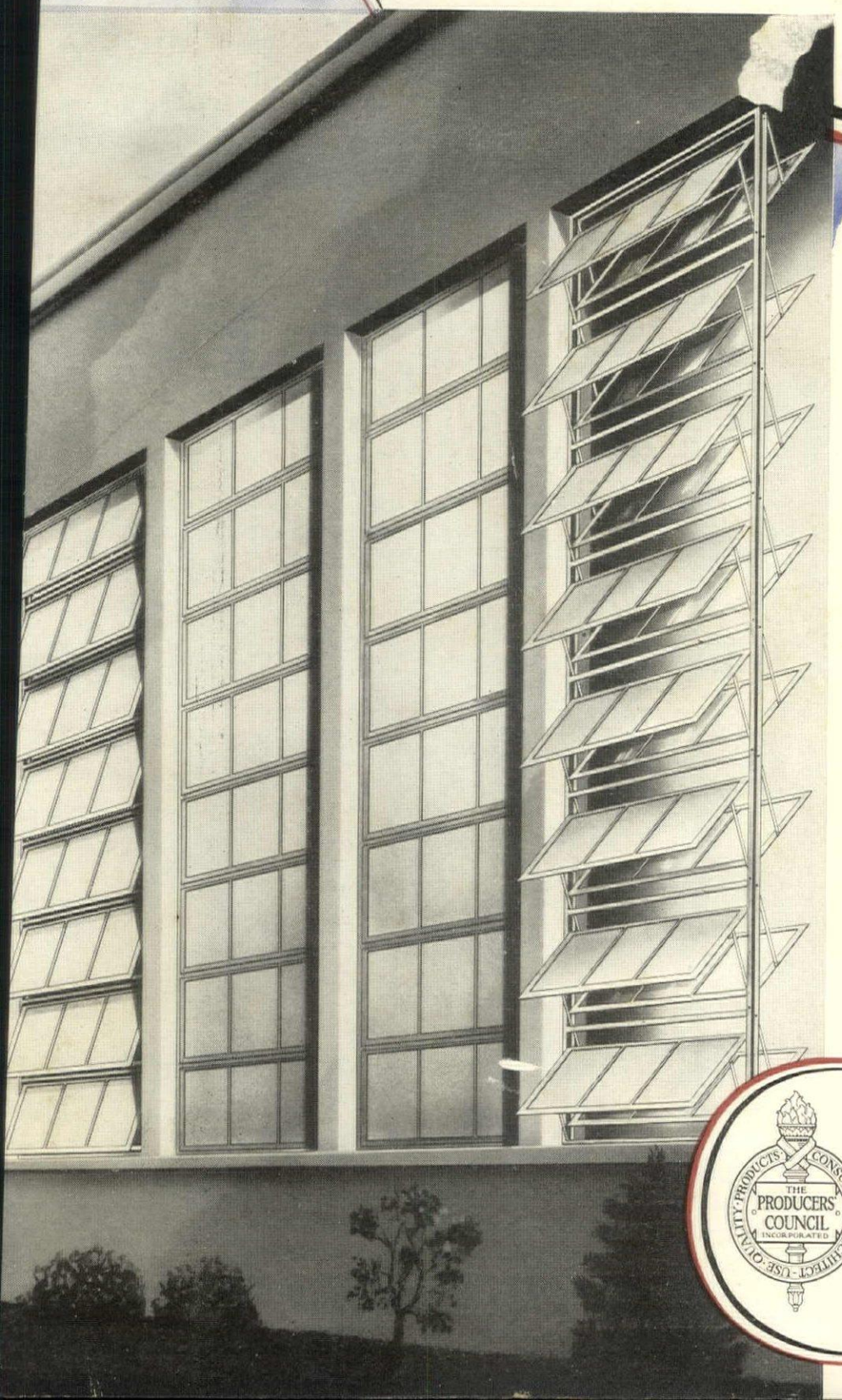
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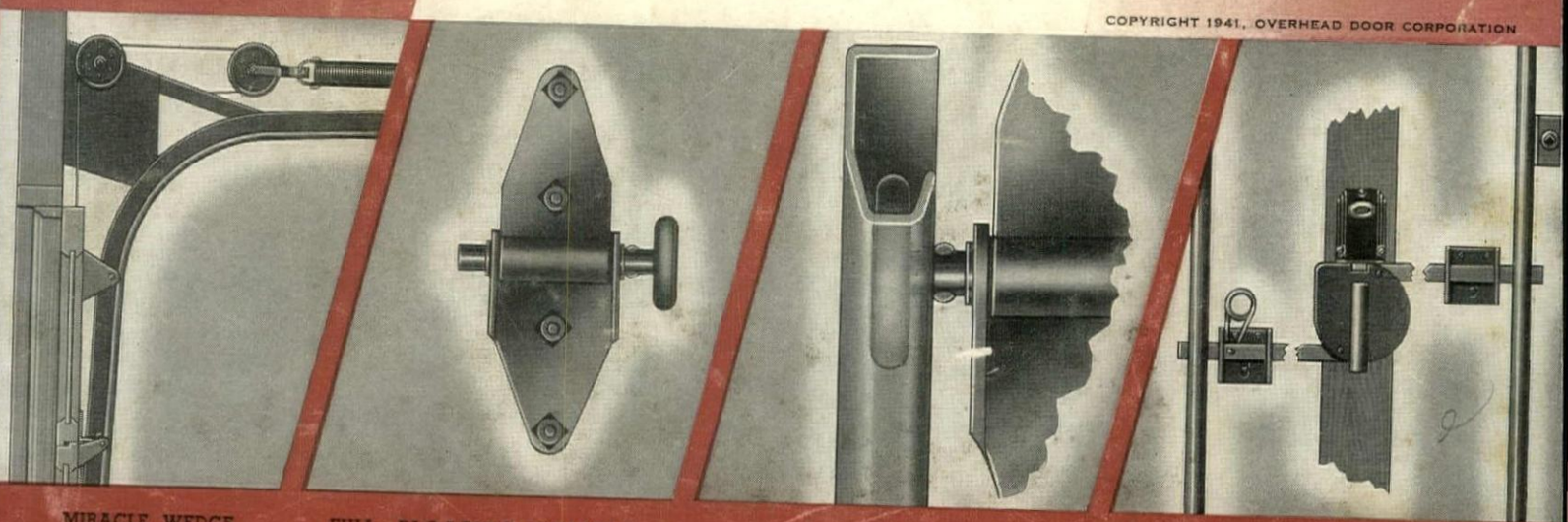
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